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ROENTGENOLOGIC CONSIDERATION OF MITRAL HEART DISEASE*

BY WILLIAM D. REID, M.D.,† AND GEORGE LEVENE, M.D.†

WHILE mitral disease occupies a prominent position as to its incidence and importance as a cardiac disturbance it not infrequently escapes detection even after careful physical examination. It is obviously of great importance to recognize these lesions in the early stages of their development. To this end we have found roentgenographic studies of great assistance.

Mitral stenosis and insufficiency are frequently associated. Of these, the former is often found alone as a pure lesion. Organic mitral insufficiency, however, is rarely found alone. This would seem to indicate that stenosis is the first to occur. It is appreciated that this hypothesis is in apparent conflict with the popular conception of the genesis of mitral disease—a conception resulting largely from the difficulty of recognizing clinically the presence of early mitral stenosis.

Early mitral stenosis may be overlooked for three reasons: first, it frequently produces no symptoms; secondly, the characteristic murmur may be so faint as to be almost inaudible; thirdly, the heart is not enlarged. Yet even early mitral stenosis often presents typical roentgenographic changes.

These signs may be better understood by reference to figure 1. In a roentgenogram of the heart the picture is composed of auricles and ventricles. Van Zwaluwenburg and Warren[1] have shown that information of much importance is obtained by studying the relationship of auricular and ventricular areas. Our own investigations[2] confirm the claim of these observers.

Line XV is the long axis of the heart. A line (RL) joining the cardiophrenic angle on the right and the auriculoventricular junction on the left and bisecting the long axis at C divides the heart shadow into auricular and ventricular areas. While these divisions do not correspond exactly with the anatomical location of the septa, they have been found sufficiently accurate to form a basis for roentgenographic diagnosis. The length of the segment CX divided by the length of the segment VC establishes the index of auriculoventricular ratio. In normal hearts it is found to average between 0.534 and 0.704. When there is relative or absolute increase of auricular area, the index rises to 0.800 or more. When there is a preponderant increase of ventricular area, the index falls below 0.500. Thus even though the total area of the heart shadow may show no change, an altered relationship of auricular and ventricular areas, which not infrequently occurs, is readily detected by these measurements.

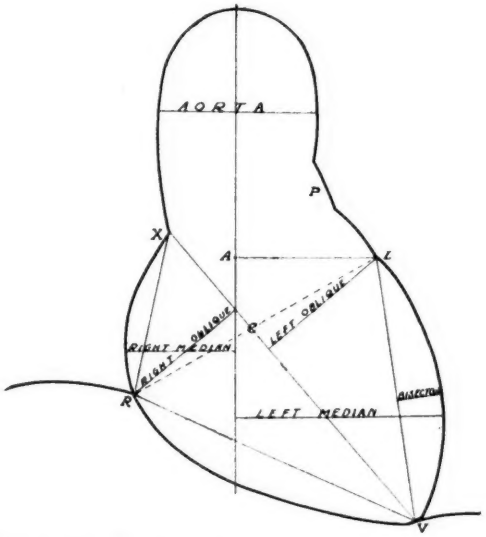

FIG. 1. Diagram showing cardiac measurements (after Vaquez and Bordet). L.A. = Left Auricle; L.V. = Left Ventricle; R.V. = Right Ventricle; R.X. = Right Auricle; C.X. ÷ C.V. = Index of Auriculoventricular Ratio; V.X. = Length; Right Median + Left Median = Transverse; P. = Pulmonary Artery; Right Oblique + Left Oblique = Base.

The right and left median diameters are not anatomical measurements, but correspond approximately with the size of the heart as determined by clinical percussion. These are obtained by dropping perpendiculars to the midline from the point of greatest distance on the right and on the left of the heart shadow.

A line joining the cardiophrenic angle with the apex measures the size of the right ventricle. A line joining the apex with the left auriculoventricular junction measures the size of the left ventricle, and a perpendicular to this line from the point of greatest bulge of the curve of the left ventricle shows the development of the

*From the Departments of Cardiology and Roentgenology of Evans Memorial for Clinical Research and Preventive Medicine, of the Massachusetts Memorial Hospitals, Boston, Mass.

†Reid—Assistant Professor of Cardiology, Boston University School of Medicine. Levene—First Assistant Roentgenologist, Massachusetts Memorial Hospitals. For records and addresses of authors see "This Week's Issue," page 1058.

left ventricular myocardium. A perpendicular to the mid-line from the left auriculoventricular junction measures the size of the left auricle. A line joining the cardiophrenic angle with the junction of the right auricle and vascular arc measures the size of the right auricle. The right and left oblique diameters, dropped perpendicularly to the long axis of the heart from the cardiophrenic angle on the right, and from the auriculoventricular junction on the left, respectively, measure the size of the heart at its base.

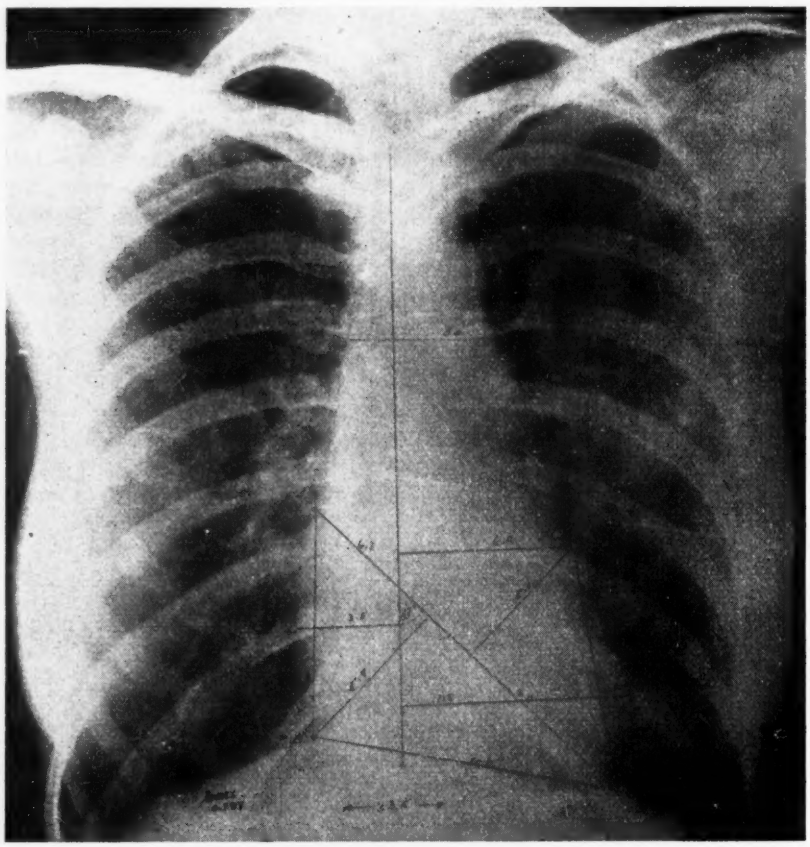

FIG. 2. Early Mitral Stenosis. The heart as a whole is not enlarged. There is, as yet, no appreciable alteration of contour. The relation of auricular and ventricular areas has changed, as is shown by the high index of auriculoventricular ratio—the earliest roentgenologic evidence of this lesion.

MITRAL STENOSIS

In mitral stenosis, the blood-stream meets with increased resistance due to a narrowing of the mitral orifice. This produces an increase of pressure within the left auricle, with consequent dilatation of its walls. The increase of pressure is transmitted through the pulmonary veins to the lungs. Right ventricular enlargement, however, is rather a late manifestation, since the increased pressure within the lungs is not immediately transmitted to the right heart, but is accompanied by a compensating mechanism in the lungs. According to Weiss[3] this mechanism consists of a dilatation of the capillaries, and it is only when this mechanism becomes inadequate that the increased pressure which started in the veins is transmitted to the arteries and thence to the right ventricle.

Our observations in the early detection of mitral disease by means of roentgen studies appear to support Weiss' hypothesis concerning late involvement of the right ventricle. On the other hand, they seem to offer as much evidence to support the fact that there are early changes in the right auricle.

Obviously the "back-pressure" theory fails to account for early dilatation of the right auricle prior to changes in the right ventricle in mitral stenosis; and yet we feel that the recognition of this change is essential to the early detection of mitral stenosis. The explanation for the dilatation of the right auricle must remain, for the present, conjectural. It may perhaps be due to an increased venous return of reflex origin[4]. In the evolution of these alterations the left ventricle does not enlarge. At times its size is actually reduced[5].

These changes are well shown in the roentgenogram (Figs. 2 and 3). The increase of auricular area is shown not only by increased measurements of the auricles, but particularly by the high index of auriculoventricular ratio. The

ventricles are small. These findings definitely establish a diagnosis of mitral stenosis notwithstanding the fact that the heart as a whole is not enlarged. It thus becomes of importance, in the study of the roentgenogram, to look not only for general enlargement, but also for an altered relationship of auricular and ventricular area.

We have found the high index of auriculo-

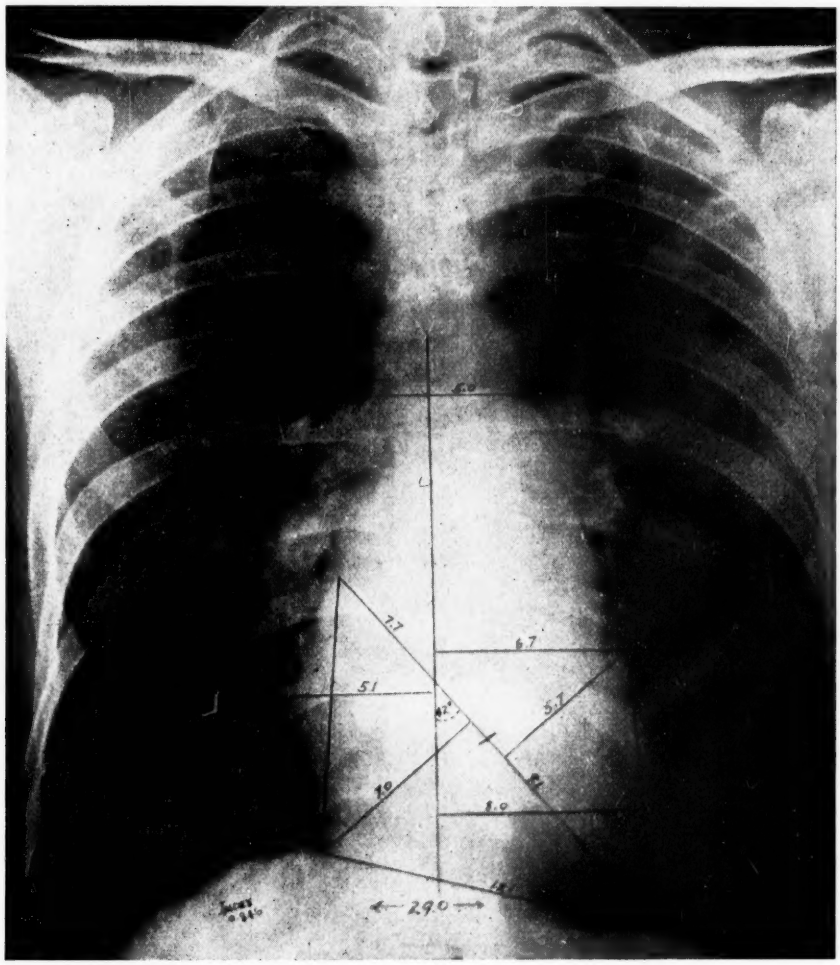

FIG. 3. Moderately Advanced Mitral Stenosis, showing the marked increase of auricular area (index 0.846), the small, pointed left ventricle and the characteristic pulmonary congestion.

ventricular ratio to be the most important single factor in the early roentgenographic identification of mitral stenosis. The frequency with which mitral stenosis may be detected by roentgenologic examination, either as a pure lesion or in combination with some other cardiopathy is encouraging both to the roentgenologist and clinician. Not infrequently the roentgenologist may be the first to direct attention to the heart in a patient whose symptoms would not betray it. At other times evidence furnished by roentgenologic examination finds its value in the corroboration of what may otherwise appear to be a doubtful clinical diagnosis.

MITRAL INSUFFICIENCY

The roentgen study of mitral disease suggests that stenosis precedes insufficiency. If this be true, we should rarely expect to find pure organic insufficiency of the mitral valve alone. We are quite aware that opinion is still divided regarding this matter and that some observers[6, 7] incline to the belief that pure organic insufficiency is not uncommon. The consensus[8, 9, 10] gathered from the literature, however, seems to favor the conception that pure mitral insufficiency of the organic type is rare, without some degree of stenosis. Thus Cabot[8] states that "in our 4000 necropsies we have been able to find 7 cases (of pure mitral regurgitation) three of which are more or less doubtful".

In mitral insufficiency the left ventricle is enlarged. It is difficult to account for this enlargement, unless we accept a theory such as that advanced by Vaquez[6]. He states that during ventricular systole some blood is regurgitated into

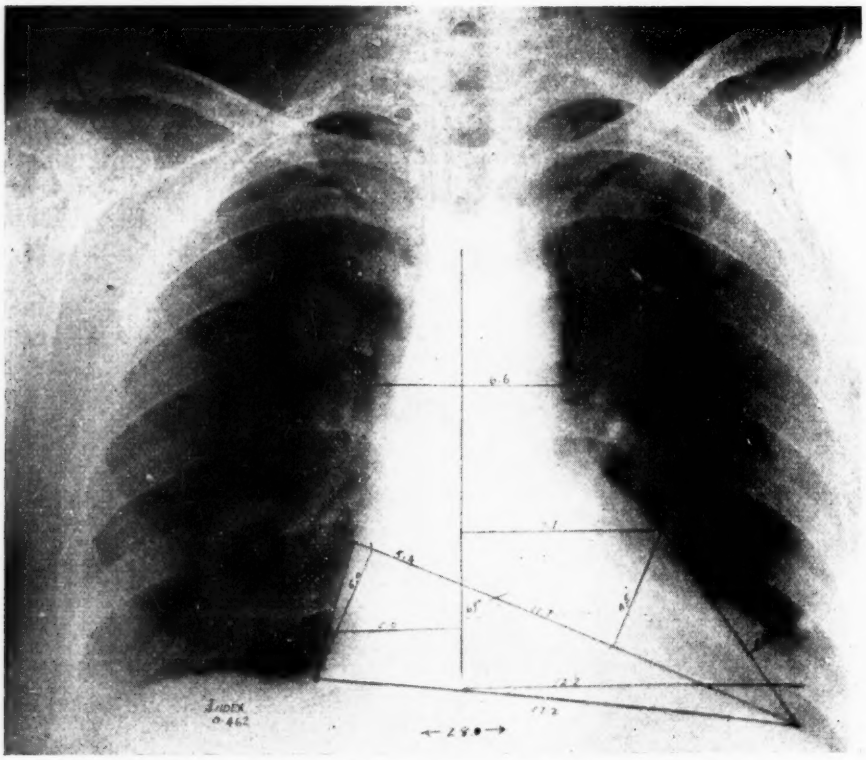

FIG. 4. Mitral Insufficiency. There is an increase in the size of the heart, most marked in its transverse diameters. The low index of auriculoventricular ratio (0.462) shows preponderant ventricular hypertrophy.

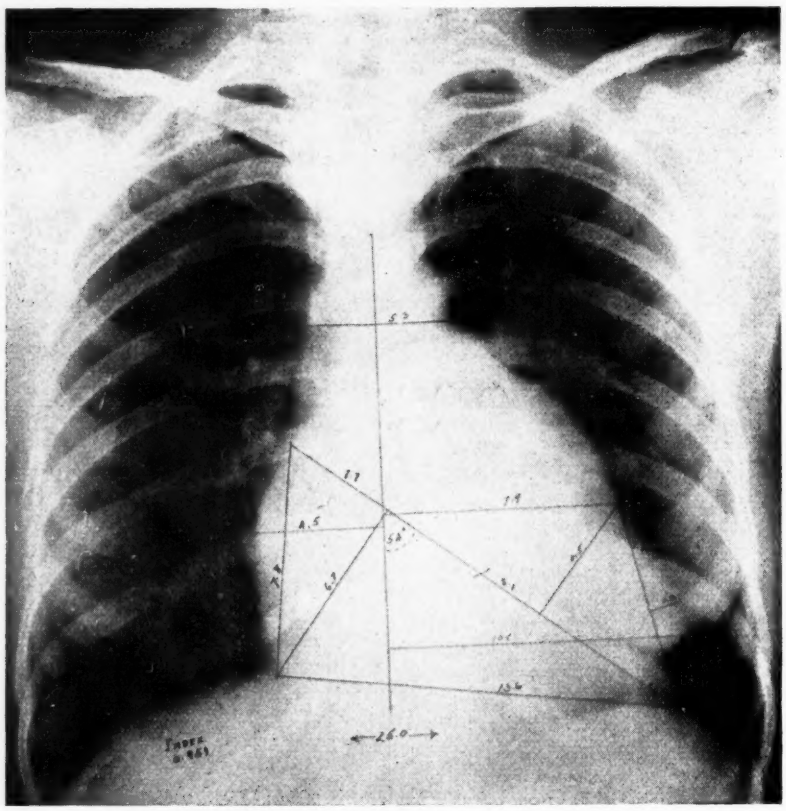

FIG. 5. Advanced Mitral Disease, showing stenosis with organic insufficiency. The enlargement of the left ventricle due to insufficiency is superimposed upon the changes produced by stenosis (see Fig. 3). In organic insufficiency the index is always high.

the left auricle. During ventricular diastole, the latter receives more than its normal amount of blood, eventually producing an increase in its size. Increased resistance encountered by the right heart due to back pressure in the pulmonary veins and the lungs ultimately results in enlargement of the right chambers. Thus mitral insufficiency is eventually found to produce enlargement of both right and left sides of the heart. The left ventricle being also enlarged, the resulting picture shows an increase particularly of the transverse diameters (Fig. 4). Thus, as the left ventricle dilates and is pushed more and more by progressive enlargement of the right ventricle, the apex moves laterally. Because of preponderant ventricular enlargement, the index of auriculo-ventricular ratio is low.

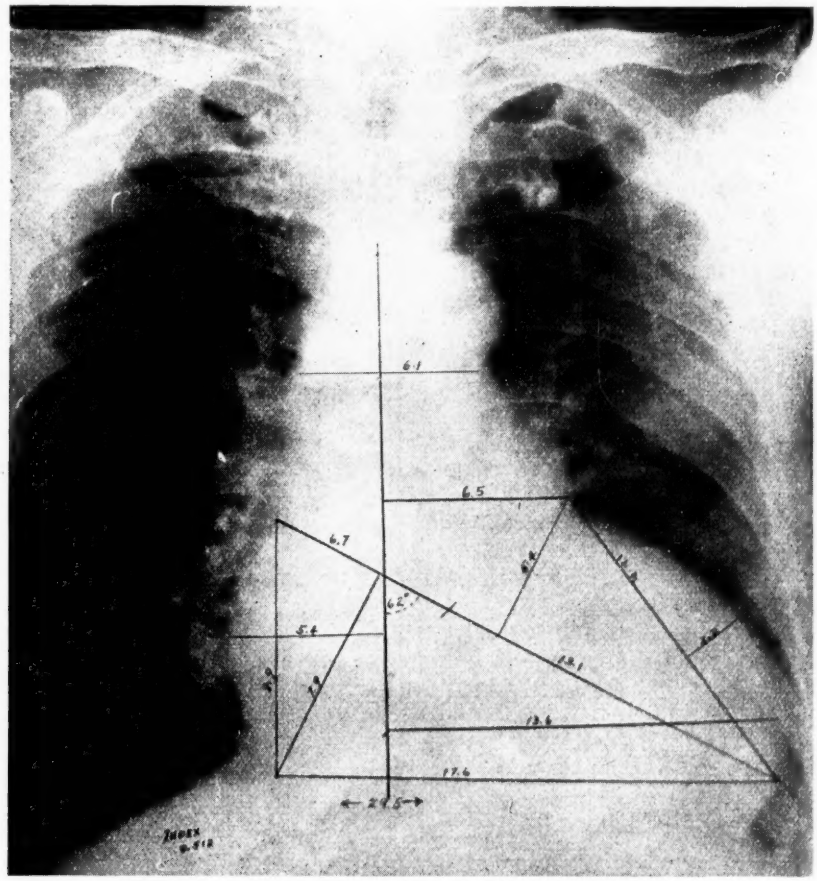

FIG. 6. Functional Mitral Insufficiency (secondary to hypertension and cardiorenal sclerosis). Note the transverse enlargement of the heart, the rounded apex, the low index of auriculoventricular ratio and the large bisector.

ORGANIC AND FUNCTIONAL INSUFFICIENCY

Differentiation of organic and functional insufficiencies of the mitral valve by means of the roentgen ray is based upon a consideration of their physiologic mechanisms. When organic insufficiency and stenosis of the mitral valve exist we assume that stenosis was the first to occur. In the latter case the left ventricle is small, the apex pointed. When organic insufficiency ensues, the roentgenologic changes incident to this lesion do not obliterate the changes produced by stenosis. They are rather superimposed. Thus, while the left ventricle becomes enlarged, there still remains the pointed apex characteristic of stenosis (Fig. 5). If we establish the previous existence of stenosis, we are safe in assuming the mitral insufficiency to be of organic origin.

Here again we find assistance in the index of auriculoventricular ratio. Recalling that the index is high in mitral stenosis and that it is low in insufficiency, we find a value which tends toward the high limit, or frequently exceeds the normal range; that is, we rarely expect to find a low index of auriculoventricular ratio in organic insufficiency of the mitral valve.

Functional insufficiency of the mitral valve is usually the result of dilatation of the left ventricle induced by increased peripheral resistance, an increased amount of blood in the left ventricle, or asthenia of the ventricular myocardium.

Increased peripheral resistance calls for increased work on the part of the left ventricle, which, in turn, is accompanied by hypertrophy

of the ventricular muscle. Similarly, an increased amount of blood in the left ventricle (such for example as may result from aortic insufficiency) requires increased effort on the part of the ventricle. This situation is met by hypertrophy of the myocardium. We therefore expect to find, in cases of functional mitral insufficiency, evidence of left ventricular hypertrophy produced as a compensating mechanism to overcome increased resistance or work.

This change is well shown on the radiograph (Fig. 6). We note the transverse enlargement of the heart, involving the left ventricle. The latter shows appreciable thickening of its wall —evidence of hypertrophy. Reference to Figure 1 will make clear that the bisector of the arc of the left ventricle is a fairly reliable criterion of the development of the ventricular wall, the normal average measurement being about 10 mm. Since functional insufficiency frequently accompanies conditions involving more work, we expect to find such evidence in the form of ventricular hypertrophy. The left ventricle is therefore not pointed as in organic insufficiency; rather the apex is blunt, often elevated from the diaphragm, and the walls of the left ventricle are hypertrophied. As the mechanism of functional insufficiency depends upon an increase in the size of the left ventricle, we expect to find a preponderant enlargement of the ventricular area. As would be expected, the index of auriculoventricular ratio is low, often below 0.300.

Evidence of cardiac insufficiency, or the appearance of arrhythmia in the course of mitral disease, is usually obtained quite readily by fluoroscopic and radiographic examination. It is further possible to note the progress of these lesions under treatment. We therefore feel that complete roentgen studies have come to play an important rôle in the diagnosis and treatment of heart disease.

CONCLUSIONS

While early mitral disease is often difficult of recognition clinically, it frequently may be identified by careful roentgen examination.

In mitral stenosis an altered relationship of auricular and ventricular areas is a typical and diagnostic roentgenographic sign.

Mitral insufficiency can be demonstrated by roentgen examination, and the organic and functional forms differentiated.

Roentgen examination affords accurate information concerning the course of mitral disease under treatment.

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DOCTOR, MEDICAL SOCIETY, LAYMAN AND STATE*

BY DAVID CHEEVER, M.D.†

THIS symposium is called to consider certain phases of the position and relations of the physician in the existing organization of American society. I have selected for my text a sentence from a letter written by Dr. Cotton Tufts of Weymouth, Mass., in March, 1765—one hundred and sixty-seven years ago,—in connection with the proposed establishment of a medical society: "The Profession at present is not upon ye most reputable footing", and the implication is justified that whether we deserve it or not, the same observation may be applicable today; indeed, in each of these one hundred and sixty-seven years it is probable that some among us have said the same thing. It is to the credit of the profession that its severest critics are often in its own ranks. It seems to me that the four chief elements in the situation are the physician himself, the medical society, the State and the layman.

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†Cheever—Surgeon, Peter Bent Brigham Hospital. For record and address of author see "This Week's Issue," page 1058.

HAS THE PRESTIGE OF THE DOCTOR DECLINED?

Formerly the minister, the judge, the doctor and the moderator of the Board of Selectmen were the leading citizens of the New England community. The relationship between the doctor and his patients was usually lifelong, affectionate and confidential; his advice on anything within his sphere,—or indeed in other fields, was sought and followed. His mind easily compassed all that was included in the medical science of his time, and he was probably superior to us in the art of practice. With or without colleagues or a selectman or two he performed the functions of a board of health, so no conflict between measures for the public good and his private interests as a practitioner were likely to arise. If local ordinances or statutes in this field were proposed, it was probably by him or after his advice had been taken.

His wants were few and his equipment for practice of the simplest:—a horse or two and a buggy, a few books and simple instruments; an office in his house and his wife or daughter to answer calls. His needs were amply met by modest fees,—the necessity or desire to create a large income did not threaten to impair the unselfishness of his service.

It seems to me that the chief factors undermining his prestige may be enumerated as follows:—(1) specialism, (2) the general diffusion of information by press, books and radio, (3) the general decline of respect for authority, (4) the alleged change in the spirit of the profession from that of a liberal altruism, to that of a commercial merchandising of medical services; (5) the growth of free clinics and to a less extent, of pay clinics, (6) the inferiority of medical service. Let us examine them briefly.

EFFECT OF SPECIALISM

Specialism has been as invaluable as it has been inevitable. The human mind cannot till nor even envisage a fraction of the field of medicine and the intensive cultivation of a limited area is the logical and desirable result. Nearly all progress has been, is being, and will in the future be made by specialists. The general practitioner finds that either his patient demands special knowledge, or he himself wishes to secure it for him, so that his own services are likely to be either merely preliminary or to constitute a sort of clearing house for medical problems. He sees the specialist collecting larger fees for what appear to be, in point of time consumed at least, no greater services. If he is intellectually ambitious he longs to have the satisfaction of attaining superior knowledge and of rendering more perfect service, though it be in a limited branch. As a general practitioner both his prestige and his income often dwindle. Curiously enough there is not always a fully compensatory enhancement of the prestige of the specialist. His contact with the patient is likely to be brief and impersonal and he can scarcely hope to attain the place in his affections and confidence formerly won only by years of satisfying service by the family doctor. Moreover there is among laymen little loyalty to specialists except in certain very clean-cut fields, such as obstetrics. The layman is a great shopper for special services, and the adulated expert of one year is likely to find himself the discarded ignoramus of the next. Furthermore, in spite of the very real admiration which we feel for the competent practitioner and the sincere effort in his behalf which we make by establishing special foundations for his allurement and encouragement, most of us feel in our hearts, I think, that specialism is certain to increase year by year, and the family doctor to diminish correspondingly. Do not misunderstand me: no doubt in the simpler or more remote communities he will continue to enjoy deserved success and prestige; — moreover in every community there will continue to be, as there are at present, either in general or special fields, men whose talent for establishing confidential human relationships will enable them to render the general advisory services of the family doctor. But it cannot be doubted that the loss of the affectionate personal bonds between patient and doctor have diminished the latter's prestige in the eyes of the laity.

The second factor;—diffusion of information by modern methods of publicity speaks for itself. The lay public is constantly instructed by syndicated health departments in the daily press, radio broadcasts, health talks before social organizations and in magazines, in the elements of both medical science and practice. These informatory agencies no doubt do much more good than harm, but by the smattering of knowledge which they afford they create in the layman's mind an illusion of competency to diagnose and treat his own case, and a critical attitude, not necessarily well-judged, concerning treatment which he may receive from a physician;—in other words, instead of looking on his family practitioner as the vehicle of all medical knowledge, his appraisal is tinged with skepticism.

That there has been for some time in American life a growing dissatisfaction with prevailing conditions in general, and an associated decline of respect for authority of any sort, is evident, I think to anyone who studies or even observes passing events. The startling increase in lawlessness, in drunkenness, in the abuse of narcotic drugs, in divorce, in psychoneuroses, in insanity and in suicide, all testify to a dissatisfaction leading to the search for means of physical or mental escape from unsatisfying conditions. Most parents, teachers, social workers, law enforcement officers and jurists, students of mental hygiene,—in fact all persons who observe critically human behavior—will agree that dissatisfaction and unrest are in the air. The layman has small patience with the failure of the doctor, practicing an inexact science and an empirical art, promptly to cure his ailments, and off he goes to somebody else, as likely as not to a cultist. I am not one of those who lay at the physician's door the major responsibility for the prosperity of quasi-medical cultists and charlatans. Our failures and infirmities are a serious contributing factor, but it is not clear that people have grown much in wisdom, as contrasted with knowledge, in the nearly 2500 years which have elapsed since the Golden Age of Greece. Were I a classicist no doubt I could quote from the pen of some social philosopher of the Age of Pericles the equivalent of the highly modern aphorism that "there is a sucker born every minute". I see no reason to hope or believe that the general

public is likely to exercise more discretion and common sense in the future than in the past in assaying the clever and loudly proclaimed nostrums of the quack or the cultist. Clearly the general spirit of unrest pervading society must receive some of the blame for dissolving the ties between patient and physician.

Whether or not you believe that the growth of free clinics, among which I wish to include also certain part-pay and industrial clinics organized under some form of insurance or compensation arrangement, have contributed to the loss of prestige of our profession, depends on whether or not you believe, as I do, that the most perfect expression of the healing art flourishes under the free, independent, personal and confidential relationship of patient and physician. No doubt these agencies are a necessary and inevitable incident in the evolution of medical economics; no doubt in many instances they render superior service; nevertheless in substituting an organization for a personality they impair to some extent the influence and standing of the individual physician, and thus of the profession as a whole.

GROWTH OF COMMERCIALISM

The next factor, the alleged growth of a mercenary commercialism in medicine, is a topic which requires some temerity for its discussion. If this change has occurred, the reason is not far to seek. In none of the liberal professions has there been such a startling change in economic conditions as in medicine. You have only to contrast the present doctor with his predecessor of fifty years or more ago. The latter's education was comparatively short, his equipment modest, his needs were in tune with the relative simplicity of the period and with the spirit of purer altruism which pervaded the profession at a period when the spiritual outweighed the material satisfactions more than seems to be the case at present. Now his education has been increased to a minimum of two pre-medical, four medical and two internship years, or to a conservative maximum for the ambitious man of four pre-medical, four medical, two intern and three additional years, or nine to ten years after college, representing an outlay of from ten to twenty thousand dollars. He must acquire as soon as may be both the necessary and the conventionally required accoutrements of a successful man,—an office outside of his home, a secretary, a car, books and periodicals and expensive instruments of precision and laboratory equipment not limited, alas! by his purse, and then at the age of thirty or more, with a statistical probability of life of but thirty additional years and a probable forced retirement from hospital posts at sixty or sixty-two if he does not die beforehand, he is faced with the problem of trying to reap and garner what he has sown, of capitalizing his great expenditures of time, vigor and money, and of satisfying his human cravings for a home and family. Meanwhile, many of the people from whom his living should be won have acquired a strange new point of view; sickness or injury is no longer an inevitable complication of life, to be provided for by savings "for a rainy day"; but is an unpredictable catastrophe, an act of God, for which an individual can blame an unkind Fate and seek redress from State or employer or insurance or free clinic. I have been amazed in reading the literature from the Committee on the Costs of Medical Care and similar sources to note the emphasis placed on some form of insurance to defray the cost of illness, and the failure even to mention personal frugality and savings for that purpose. The minions of commerce, by every method of high pressure salesmanship, have created among the people a pathological desire for luxuries and a spurious ability to secure them by buying on the installment plan, which mortgaged their resources to an indefinite future and left nothing to pay the cost of the inevitable illness. Thus the proportion of the population who constitute the private patient class has diminished. Moreover the same tendencies have affected the members of the profession, some of whom in the effort to "keep up with the Joneses", and secure the alleged necessities for happiness for their families and themselves have thrown frugality to the winds, and strive to secure larger income from increased professional fees.

Who can say what professional services are worth? In one sense, if a life is saved or a crippling infirmity relieved, nothing is too much to pay; on the other hand, the artisan who discovers and corrects in your home a serious fault in construction, in chimney, in electrical wiring, or in gas conduction, may in so doing have just as surely averted a major disaster, yet he is paid only the customary rates for his craft. Professional fees must be gauged by the character of the services rendered and the patient's ability to pay, and by the custom of the time and place. I wish that I could deny that commercialism is replacing altruism in the matter of fees. Sums in five figures for surgical operations; $5000 for a major procedure which could be safely entrusted to any one of twenty surgeons in this community; $1000 or double that sum for an unremarkable confinement; $1000 for putting a plaster mould,—toes to groin, on a fractured femur; $500 for taking it off; $500 for a consultation involving a day's absence;—these may be justified but only under appropriate circumstances. Doubtless they are exceptional, but sensational news flies fast and far, while the everyday devoted services and considerate fees of the modest and conscientious members of the profession are not broadcast. The laity, with characteristic lack of judgment, assumes that what is really notorious is actually

customary, and unwilling or unable to pay such fees, they resort to free clinics, or cultists, or to neglect of their ailments. Too many specialists, especially surgeons, try to make up by the size of their fees for the paucity of their patients. One regrettable,—and I believe growing feature, is the custom in certain large group clinics of relegating wholly to a paid fiscal agent the assessment and collection of fees. To entrust these things to a person trained in a commercial school, a "go-getter" whose chief ambition is to show on his books the greatest possible excess of current income over expenses is to reduce the practice of a liberal and altruistic profession to the commercial merchandising of services. I cannot and will not believe that the physicians in charge of these clinics are cognizant of some of these instances;—such for instance as that of a widow earning $23 per week, who while trying to help her son with his college education, is struggling to pay a fee of $250 for surgical services.

These proportionally exorbitant or actually excessive fees are helping to destroy in the eyes of the public the priceless prestige of a profession whose exemplar was the Good Samaritan.

INCOMPETENT PROFESSIONAL SERVICE

The most damaging indictment of all is that some physicians fail to give the patient the benefit of careful and conscientious treatment. Of course we are not concerned in the present discussion with still unsolved problems of disease, nor with mistakes in diagnosis or treatment made by well-trained physicians who with conscientious honesty have done their best to help the patient. The science of medicine is imperfect, and fallible humanity is bound to err, but it cannot be denied that the neglect of patients through ignorance, laziness, carelessness or a plan of treatment redounding more to the profit of the doctor than to the benefit of the patient is a real evil. This and the mercenary spirit are the real malignant growths eating at the vitals of our profession. Do I exaggerate it? Let us quote chapter and verse. A majority of patients with cancer of the rectum reach the surgeon only after more or less prolonged treatment of their bleeding as hemorrhoids by physicians who are either too lazy or too ignorant to introduce a finger into the rectum and feel the easily palpable growth, or who, if they are unwilling or incompetent to do this, feel no obligation to send the patient to someone who will. A middle-aged woman, the mother of several children, consults her general adviser for persistent pain in the shoulder. He is a genial man, magnetic, reassuring, with a warm hand-clasp. It makes her feel better just to have him talk to her, which he does and gives her a prescription. For nearly three months the boring pain continues,—for nearly three months she makes weekly visits to the doctor, and usually she feels better for seeing him,—for a while. He never at any visit asks her to disrobe or examines her shoulder, although when she finally comes to a hospital the deformity of a sarcoma of the humerus is plainly visible through her clothes. An inter-scapular-thoracic amputation relieves her pain until her death a year and a half later. A surgeon who according to his own account has one of the largest practices in Greater Boston, is apparently satisfied with the pre-operative diagnosis of abdominal tumor by feeling it through the patient's garments, and with the evaluation of her cardio-vascular-respiratory soundness by the examination made by the specialist in anesthesia who sees her for the first time on the operating table. What wonder if the presumed fibroid proves to be a carcinoma of the colon, which the surgeon is neither prepared nor competent to handle! A specialist in x-ray therapeusis receives from a practitioner a patient with metrorrhagia due to a presumed fibroid; at first her diminishing periods and hot flushes indicate the expected recession of ovarian function and symptomatic improvement, but later persistent slight bleeding seems to call for more x-radiation. Apparently the specialist does not make pelvic examinations or he would discover, as did a hospital clinic, that there is now no demonstrable fibroid, but a bleeding carcinoma of the cervix with infiltration of the pelvic cellular tissues. Many months have been lost, the lesion is inoperable and it is doubtful how much good radium may do. These are not isolated instances; they happen to spring to memory as this is written and they can be multiplied many times by every man of experience in this audience. Patients so mistreated make, together with their friends, advocates of State medicine, or disciples of a healing cult.

INFLUENCE OF MEDICAL SOCIETIES

What part is and should be played by our medical societies in determining the public relations of physicians? The object of the Massachusetts Medical Society "to promote medical and surgical knowledge," as avowed in 1781 by Dr. John Warren in his letter to the public, expressed the fundamental ideal of the founders,—an ideal which has been faithfully and loyally observed during a century and a half by a series of splendid men who, as presidents or other officers, have served the Society. The profession in order to make its voice articulate and its influence felt, must be organized and its activities should include every means by which the welfare of the people may be promoted through the practice of the art of healing,—a broad commission which includes protection of the legitimate interests of both physicians and laity, and promotion of cordial and coöperative relations with governmental agencies created by the people. Is

the influence of medical societies growing or declining? Our great national Society, strong in numbers, resources and leadership, and representing the physicians of a nation of one hundred and twenty million people, grows apace in usefulness and influence. Of our State Society and its constituent district bodies one cannot be so optimistic. Our solidarity is threatened by the disintegrating influence of specialism; small groups among us attend the meetings of special societies created to consider the ills of the nervous system, the eye, the ear, the nose and throat, the teeth, the heart, the lungs, the alimentary tract, the rectum, the genito-urinary tracts—male and female— the bones and joints, the skin, the mind;—I apologize to the spleen and the carotid body in case, without my knowledge, their claims have been similarly recognized! In addition, every hospital of note has its clinical meetings, numerous semi-social medical groups convene and medical historians and medical examiners appropriate some of the precious evening hours. The giants of past generations loom colossal to our memories, but I am convinced that our leaders of today are of equal stature. The units, however, of our professional army are advancing and deploying as individual groups practicing tactics rather than as component parts of an army following a grand plan of strategy to win the war. The unenlightened major portion of the public who cannot understand the viewpoint of a liberal profession, and who, with more or less justice, regard a labor-union as a means of collective bargaining with a presumably hostile representative of capital, look with the same suspicion on our Societies as witness the provision in the Medical Practice Act that no more than three members of the Massachusetts Medical Society shall be included on the Board of Registration in Medicine, notwithstanding that the Society includes practically all of the well-qualified and public-spirited members of the profession. The attendance at some of our general meetings is often wretched: witness the seventy odd men who, of the eleven hundred and fifty members of the Medical Library and Suffolk District, attended a recent meeting on the most urgent economic problem now confronting the profession—the cost of medical care—which was addressed as a guest of honor by one of the most distinguished authorities on the subject in the country, and by our own leaders. Apparently about six per cent of the members of this society may be counted on actively to participate in our meetings;—the regenerate attend,—the unregenerate absent themselves and some at least of them scoff and,—giving nothing of themselves,—ask what they get out of the Massachusetts Medical Society. If our members take so little interest how can we develop a sound and vigorous body of opinion and creative force to play a proper part in the determination of our destinies?

THE MEDICAL GROUP AND THE STATE

From what has been said and what we all know about specialism, it is clear that a considerable proportion of sick people need the services of more than one physician in any given illness, and these may be secured by the free interchange of advice and help among the doctors of a community—by consultations, in other words, which must not be made too burdensome financially for the patient. The modern development of this idea in group practice may furnish under the direction of a conscientious and competent director, a nearly perfect solution of the problem. In the harmonious functioning of a group of specialists whose conclusions can be correlated and interpreted therapeutically by a man of broad and experienced outlook, the patient as a whole (rather than his particular disease) is likely to receive the most benefit,—and be it remembered,—his pocketbook is to be included in the conception of his wholeness. For most practitioners especially in small communities, inclusion in a group is impossible and consultation difficult, and here in certain instances, the State steps in as a responsible and helpful partner. Let us examine briefly the activities of the State and municipalities in the field of medicine and their relation to practice.

For many years and by common consent these public agencies have assumed the regulation and care of communicable diseases including tuberculosis, the indigent sick, the insane, the deaf and the blind. To these have been added lately cancer, and further extension is in contemplation. The State makes bacteriological, serological and tissue diagnoses, and furnishes vaccines, anti-toxins and serums for prophylaxis or treatment in smallpox, typhoid and paratyphoid, diphtheria, scarlet fever, meningitis, tuberculosis, syphilis and gonorrhea; contributes to health education by forums in the daily press, by radio broadcasts, by the distribution of pamphlets and leaflets; coöperates in the promotion of maternal, infant, child and school hygiene, and in addition carries on the functions of sanitation by the inspection of foods and drugs, water supplies and sewage disposal. Surveys are constantly being made of various phases of diseases, and of hospital facilities, and other less important functions could be mentioned.

We doctors see in some of these activities an encroachment on the field of private practice, and some of us fear, or think we have experienced curtailment of practice and of income as a result; moreover, if inclined to prophecy, some of us think we discern the advancing cohorts of the advocates of a socialized State medicine. It seems to me that in general the State thus far has provided for a class of patients for whom we could not care adequately ourselves, and who would make serious calls on our time and strength without corresponding financial return.

Moreover the State in its relation to the practitioner may be likened to a consultant or a laboratory expert in a group clinic except that its services are rendered free of charge. The complexity of diagnostic and therapeutic measures is sure to increase, and the conscientious practitioner is likely to be more and more dismayed at the difficulties of giving adequate service, unless help is easily available. Not all of us doctors feel competent to diagnose by lumbar puncture and examination of spinal fluid a case of anterior poliomyelitis, and certainly, except for the Harvard Infantile Paralysis Commission working in alliance with the State it would be utterly impossible to secure the immune human serum which apparently, if given early, appreciably lowers mortality. As progress is made in the treatment of pneumonia, it is likely that the State or some private foundation will provide for the rapid differentiation of strains of the pneumococcus, and the provision of a specific vaccine. When the doctor is confronted by such problems, such aid as is furnished by the State, free of charge, is invaluable. In my opinion, the reputation of the physician who sends—or better accompanies—his patient to a state diagnostic clinic for consultation, who procures treatment there for him in case of his inability to pay for a specialist's services, or avails himself in other ways of the State's resources, will gain vastly more than he will lose in prestige among his patients, and will be regarded as a man who can be depended on to leave no stone unturned to benefit them.

On the other hand, at some future time it may happen that the administration of the State's activities in the field of medicine will be in the hands of directors who have little knowledge of or sympathy with the problems of the practicing physician, who favor the socialization of medicine, or whose enthusiasm for their projects blinds their better judgment. On such men it must be urged that the most essential and potent agent in alleviating the illnesses of the people is the physician himself;—the physician, free to use in the development of his work the same initiative, intelligence and liberty which have characterized generations of his fellow citizens in building the railroads, the cities, the power-generating plants; in digging the canals and mines; building the roads, developing the industries and resources of this country,—and free also to earn a reasonable competence as the necessary material reward for his work. The State has no more important duty and privilege in its warfare against sickness than to safeguard the well-being of the physicians of the State. We might paraphrase the slogan that contented cows give wholesome milk;—by saying that only from contented and prosperous physicians will be obtained the best medical service. So far as my present knowledge goes, I see little reason to recommend for adoption in this country any of the various forms of socialized medicine which flourish in Europe, with the bureaucratic control of the individual physician, the political element in appointments, the army of office-workers, the formidable reports and documents, the malingering beneficiaries of the insurance system, and the almost total abolition of the personal relationship between physician and patient.

LEGISLATION

In the matter of legislation on medical matters, I feel little justification to speak, as I have little experience. My experience in going to hearings before legislative committees has not often made me feel that my attendance was worth while,—sometimes I have been unable to gain admission to the chamber because the legions of the cultists or the cranks have already filled all available space. Often the committeemen appear inattentive and uninterested; messengers come and go, there are whispered consultations and perusal of documents while the spokesman of our profession tries to present his brief. We Americans, it appears, have the habit of seeking redress of our grievances by passing laws, and more laws, instead of repealing those which are foolish or unenforceable and enforcing those which are good. It is said that in a recent year 2500 bills affecting medical practice were introduced into legislative bodies of the United States, mostly imposing restrictions or burdens on physicians or aiding cultists. I listened while a legislator presented his reasons for introducing his bill for the establishment by the State of a hospital for arthritis. His aged mother, it appeared, had had arthritis for many years and was now crippled; doctor after doctor had been tried without success,—they came and prescribed medicine as long as you paid them their $2 or $3 per visit, and then they stopped; she had spent a fortune on patent medicines until, as her son thought, her stomach must be "all rotted away",—and now it seemed high time that the State should do something about it, with the taxpayers' money. I know nothing about the facts, but I cannot help suspecting that no doctor had ever painstakingly explained to this legislator the nature of arthritis so far as we understand it, its hereditary element, its insidious approach, its protean exciting causes and the impossibility of cure after structural changes have taken place. Sometime, somehow, some doctor had failed in practicing the art of his profession. If every member of the General Court enjoyed a mutually confidential relationship with a good physician,—if through the years he had learned to turn to him for counsel and help in sickness or in related problems, it seems certain that

he would seek his advice in matters relating to medical legislation.

How then can we doctors influence legislation? First, and by all means foremost, by practicing medicine as a liberal altruistic scientific profession, scorning to reduce it to the level of a commercial merchandizing of service, pursuing the science, perfecting the art, and giving to each patient the best of which we are capable either in person or by invoking the special knowledge of others;—this will do more than anything else to create a powerful mass of favorable public opinion; secondly, by the legitimate enlightenment of individual legislators who, as friends and as patients, have reason to trust the wisdom of our judgment and the purity of our motives; thirdly, by helping to formulate, through constant attendance at and discussion in medical meetings, an enlightened and wise outlook on our economic problems and public relations, and finally, by supporting our chosen spokesmen before the legislature by attendance and well-chosen discussions at Committee hearings.

Our profession by its very nature is altruistic rather than selfish. It aids the sufferer when his need is greatest and his ability to pay is least. Its scientific advance has widened the field of practice in some directions but contracted it more than an equal amount in others, thus actually lessening the need for our service. If food, shelter, and raiment are the basic material necessities of humankind, health is scarcely less fundamental in the edifice of human happiness, and mankind will seek it, with much trial and error, wherever it is to be found. We have no vested rights which are incompatible with public well-being. If we scorn to lay ourselves open to the charge of incompetency and greed; if we take pride in making available medical relief at a cost which the people can afford, if we lead rather than allow ourselves to be led in coöperative effort by all reputable agencies to secure public health, at least we may feel, if political control of medical practice shall come, that we were not tried and found wanting.

EPIDERMOPHYTOSIS [ATHLETE'S FOOT] A CAUSE OF SERIOUS STREPTOCOCCAL INFECTIONS

BY JOHN HOMANS, M.D.*

IT needs no argument at the present day to show that athlete's foot is a very common disease, acquired by perhaps two-thirds or more of those making use of common shower baths, swimming pools or even dressing rooms in schools, colleges or athletic clubs. Those in charge of athletic activities at such places are now awake to its nature and under the direction of their medical advisers are instituting preventive measures. But though a number of school and college authorities have taken action against the disease, medical men in general are by no means aware of the seriousness of the situation. Leaving out of consideration the possibility that the etiologic fungus may in time acquire such virulence as to become a cause of internal disorders, it may confidently be asserted that *streptococcal infections, entering by way of the local lesion,* are now so common—so very common—that any lymphangitis or cellulitis of the leg not clearly traceable to infection of a hair follicle or some trivial wound is almost certain to be due to this cause.

At the moment this paper is being written, there are, in the wards of the Peter Bent Brigham Hospital two boys of 15 to 20 years who have already been incapacitated for several weeks by streptococcal infections grafted upon epidermophytosis and who are by no means through with their troubles. One suffered a diffuse cellulitis so destructive that skin grafting is now being used to close his wounds. The other exhibited the more usual form of secondary streptococcal infection, that is, an acute lymphangitis, and this was of sufficient virulence to cause a serious suppuration in the superficial lymph nodes of the groin.

But such lesions are not confined to boys and girls. A gentleman of middle age who had suffered for many years from moist itching areas between his toes, undertook one day, while in swimming, to sit on a raft and give his toes a particularly good scratch, removing most of the thickened skin. Result, a day or two later, a chill, fever of 103°, and a streak of lymphangitis running up to a sore lymph node in the groin. And the writer must confess to having been the victim, some years ago, of a nearly similar complication on more than one occasion. Indeed, when crossing on a transport during the war of 1914-18, he was taken with so violent a lymphangitis that when a German submarine (or whale) caused an alarm in the convoy, he was one of the only two individuals, under military orders, who failed to answer the call to go on deck; he, because he was too ill to care for a submarine (or whale), and the other, who lived well below the waterline, because he had just been operated upon for a ruptured appendix.

There are a number of nearly related fungi capable of causing the disease in question. These

*Homans—Surgeon to the Peter Bent Brigham Hospital. For record and address of author see "This Week's Issue," page 1058.

are readily recoverable by scraping scales of skin from the lesions and show well under the microscope (high power, about X750) when a drop of 40 per cent solution of sodium hydrate is added to the scrapings.

The common forms of epidermophytosis are (1), a sodden, white thickening between the toes and (2), a diffuse, dry, thickening and scaling upon a more or less reddened base. Both forms itch, the sodden form the more severely, and both have an extraordinary capacity for latency; that is, the disease may show itself only in hot damp weather or upon a change of domicile. For instance, a doctor, who had no idea that the disease was present in his hands, went in the spring from Boston to a medical meeting in Richmond. Whereupon both hands broke out, in the characteristic fine blisters, and the skin scaled off, an exhibition perhaps of a trichophytid, that is, an effect of the disease at a distance, like the syphilid of syphilis. Again, the lesions may be localized in an extraordinary way. The first time the writer ever became aware that a severe recurrent cellulitis and lymphangitis of the leg could originate in epidermophytosis, he discovered the telltale sodden patch between the third and fourth toes of the patient's left foot. All other parts were free from the disease, which had only attacked the toes in question because of the moisture engendered by a collapse of the transverse arch of that foot.

The sodden form, which, as already has been explained, only appears between the toes (rarely the fingers), cracks readily, and when its surface is rubbed off, exhibits a reddened, perhaps shiny, surface which bleeds easily. The shallow, fine blisters so characteristic of the dry, scaling form do not show themselves except, perhaps, at the exposed edge of the lesion. The sodden type is aggravated by hot damp weather and is encouraged by bathing. (The dirt farmer does not suffer from the disease.) It causes very obstinate thickenings about the nails, leading to rather mild, chronic runarounds both in the feet and hands.

The dry, scaling form first shows itself as a decided heaping up of the skin. This thickening, if attentively examined in a good light, will appear dotted with many fine round spots, blister-like in appearance but not raised above the surface. Such a state is followed by desquamation, which if it is hastened, leaves a thin, reddened tender surface. Usually a fairly normal looking skin is again formed and the same cycle is repeated. This sort of disease may occasionally occupy the tips of the fingers and the palms, surfaces which sweat easily but which are ordinarily exposed and dry. It is far more common on the toes and on the sides and soles of the feet.

Secondary infections arise in most cases without the individual's being aware of any trauma to the lesion or any change in its behavior. It must be supposed that through cracks or through the exposed deep skin, bacteria—streptococci as a rule—enter the superficial lymphatics. There is seldom any sign of lymphangitis on the foot itself. The pinkish streak, characteristic of tubular lymphangitis, usually begins above the ankle and weaves its way toward the groin. The patient feels ill, may suffer chills and a fever of 102°-104°. In some instances, the lymphangitis takes the reticular form, that is, a pinkish patch, much like erysipelas except that its edge is not raised. From this a tubular streak may run up the leg or the reddish patch may be the only sign of the disease.

Lymphangitis seldom lasts more than a few days, and often subsides without causing any serious degree of lymphadenitis in the groin. Yet not only may the superficial femoral glands break down but it is conceivable that the lymph nodes of the popliteal space, which lie beneath the muscular aponeurosis, may form an abscess.

A diffuse cellulitis sometimes occurs independently of any lymphangitis, but more commonly is associated with it. Following the first blush, the tissues are likely to become swollen and finally porky, softening here and there, and when incised, discharge the usual thin streptococcal pus. Such a disease is quite like any other infection with the streptococcus, and only differs from the septic processes of the hand and forearm in that the initial causative lesion does not require, and indeed cannot be given, surgical or antiseptic treatment. During the acute phase, it is best kept hot and dry. Later the appropriate remedies for epidermophytosis should be used.

Many of these matters are illustrated by the case of R. L., a medical student of 22 years. He had suffered for a year from a severe epidermophytosis which, under treatment, had recently improved so that in mid-winter he paid little attention to it. One afternoon in February he felt a little below par, but played a vigorous game of squash-racquets and took a shower. In drying himself he happened to observe a crack in the skin between the fourth and fifth toes of his right foot. That night, at 1:30, he was awakened by a terrific chill and noted a little pain in his right groin. Later in the night this pain increased, the groin became tender, and swollen lymph nodes became evident. At no time was there any reaction about the crack between his toes and not until the next day did the characteristic streaks of acute lymphangitis appear. At this time there was also noticed a reddish, swollen patch upon the median and lateral aspects of the lower leg.

The boy was laid up for nearly two months. The reddish patch proved to be the beginning of a cellulitis which broke down and was drained with little loss of substance. Later, the nodes in the groin melted into an abscess. But what

caused the greatest difficulty and delay was a deep septic process which appeared among the hamstring muscles and which was subsequently traced to the popliteal space. This evidently arose from a broken down lymph node beneath the deep fascia covering this space and called attention to what is seldom realized, namely, that though most of the large lymphatics draining the leg follow the great saphenous vein to the groin, a group from the lateral and posterior surfaces follows the lesser saphenous vein into the popliteal space. Thus infections of the lateral and posterior surfaces of the leg may penetrate to deeper parts and appear among the muscles of the thigh.

In this case, then, the chain of events was the following: epidermophytosis, secondary hemolytic streptococcal infection, acute lymphangitis and lymphadenitis, cellulitis, secondary abscess of the inguinal and popliteal lymph nodes and a deep abscess of the thigh. This, of course, represents, short of a fatality, the high watermark of such infections. A mild form of the disease might be marked by a few days of lymphangitis of the blushing reticular sort without extension to the groin, or of the common tubular sort leading to a swollen inguinal lymph node. Even in such cases, chills and considerable fever would be expected but, more often than not, no local change in the region attacked by the epidermophyton would be evident.

The writer has seen the disease in a boarding school boy who showed the most outrageous sort of fungus infection and whose chills and fever had prevented his taking his examinations for college. At that time, neither the school authorities nor the physician in charge seemed to have any notion of the nature of the disease. It is to be hoped that such an event will soon be unusual.

The cure of epidermophytosis is notably difficult, a matter as to which the dermatologists will willingly testify, but its spread can undoubtedly be checked if not altogether controlled by certain preventive measures. These may include the general use of a powder containing 20 per cent sodium thiosulphate in boracic acid; the installation perhaps of a shallow pool, filled with an appropriate fungicide, through which every one using swimming pools and showers must walk; the use of rubber slippers; the prolonged steam-sterilization of towels, etc. Already good reports of these and doubtless other measures are at hand. A more general realization of the dangers attendant upon the disease should lead to a widespread support of such precautions and to a continued search for the ideal treatment of the local lesions.

The following is a satisfactory method of identifying the fungus, very kindly supplied by Dr. C. Guy Lane:

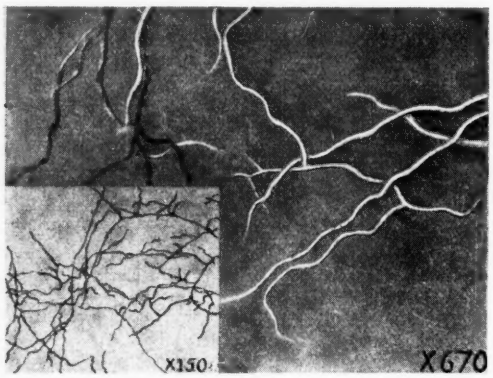
I. By direct examination of material from the eruption, and
II. By the cultural method.

I. The first method is a relatively simple one and requires for apparatus only a microscope with low and high dry objectives, glass slides, a 40% solution of potassium hydroxide, a pair of fine forceps, small sharp pointed scissors and a curette.

The material to be examined is removed from the lesion and placed on a glass slide. When the lesion is a vesicle, the top of the vesicle, if it is a small one, or a portion of the extreme periphery, is clipped off with the scissors. When the lesion is dry and scaly, the material is scraped off with a curette or is taken off with scissors and forceps, preferably from the edge of the lesion in an active part or from beneath the surface of the more chronic part.

A few drops of the potassium hydroxide solution are added to the material on the glass slide. A cover glass is placed over the specimen and if it is necessary to examine immediately, the slide should be warmed gently over an alcohol lamp or bunsen burner. Avoid bubbling.

Oftentimes somewhat better results are obtained if the examination is made one or two hours after the slide is prepared, or allowed to stand overnight. Then the mycelia in strands or segments and the spores will stand out as more refractile objects often with a faint greenish tinge, and the normal cellular outlines in the tissue will be nearly obliterated.



A sketch after photographs loaned by Dr. C. Guy Lane. Under the high power, the mycelial threads appear quite refractile. The beaded ones appear darker. The insert gives an idea of the appearance of the fungus under lower power.

The mycelia may be seen under the low power but better observation of both mycelia and spores can be had with the high, dry objective. Avoid too much light. Be careful about mistaking fat droplets, cell walls, crystals, and other artifacts for the mycelial threads or segments. Material for examination may be preserved in the dry state for many days between two glass slides held together by an elastic band or piece of adhesive.

II. For obtaining cultures, a portion of the material is soaked in 70% alcohol for ten minutes in order to destroy the bacteria, washed in sterile water, and is then planted on Sabourraud's proof media. As soon as a growth occurs it is transferred to fresh media in order to secure a pure culture.

LARGE CYST OF THE ORBIT. CASE REPORT*

BY J. W. CRAWFORD, M.D.,† AND ELLIS KELLERT, M.D.†

SMALL cysts of the orbit are not infrequently seen in ophthalmic practice but cysts of large size are quite rare. Such cysts are most frequently dermoid in origin but may also arise from hemorrhage or parasitic infestation as by the echinococcus; there may also occur cysts of the synovial membrane lining the trochlea of the superior oblique muscle or the optic nerve, and those due to ectasia of the ethmoid cells, frontal sinus and nasal cavity. Cephaloceles may also occur within the orbit and their differentiation from true cysts is of great practical importance.

Orbital cysts appear to occur at all ages. In children they are, as a rule, small and when they appear shortly after birth, are more likely to suggest encephalocele or meningocele, the protrusion taking place along the line of bone suture. When such cysts have the communication with the subdural space obliterated their removal is not dangerous; otherwise meningitis may develop.

The history of our case is as follows:

The patient, a married woman 66 years of age, noticed about eight years ago a slight swelling to the right side of the nose near the eye. The skin was not discolored. A physician who examined the lesion thought it might be a cyst and punctured it, obtaining a small amount of turbid fluid. The swelling, however, became progressively larger, involving the eye and displacing the globe, vision soon being lost. The mass was fairly tense. About a year previously an ophthalmologist inserted a large needle and removed considerable reddish puriform material but the swelling did not subside although the tumor became softer. Nasal breathing had become more difficult and was not possible through the right side. There was mild "running" of the nose.

On physical examination, the patient showed no change other than the local condition. She was of normal weight and well preserved for her years. The teeth were false. Scattered about the face were several small papillomata. The right orbit was occupied by a large protruding globular mass 10 cm. in diameter, covered by skin which appeared stretched, dusky-red, and traversed by dilated veins. The growth impinged upon the nose and extended almost to the upper lip. On palpation it was somewhat cystic to the touch and not tender. On the outer surface of the growth the eye could be seen, not greatly altered. The eyeball appeared normal. The lids were well preserved, except for marked widening of the inner angle, and could be moved at will by the patient although motion was restricted. There was slight epiphora.

The mass was removed by Dr. A. J. Bedell and as received comprised a sac with a large opening at one point. It was partly covered by skin, near one margin being the eyeball, lids and associated structures. The wall of the cyst was thick and somewhat rigid and on palpation a crackling sensation was obtained. Incision showed in the wall of the cyst, posteriorly, thin plaques of bone, but no bone was seen between the globe and cyst wall. The lining was smooth and reddish and a few small raised bluish areas were scattered about. The contents were not received with the specimen but resembled the material obtained at the previous puncture operation.

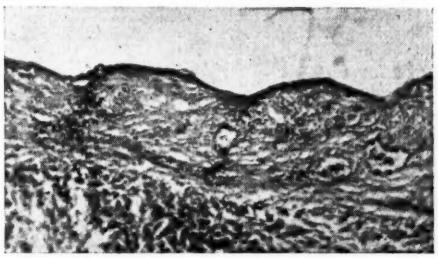


FIG. 4. Photomicrograph of cyst-wall. About × 100.

FIGS. 1-2-3. Photographs showing size and location of orbital cyst.

Microscopic examination shows the cyst-wall to be composed of dense fibrous tissue containing numerous blood vessels that are most abundant in the outer layers. These vessels contain small lumina and are surrounded by thick layers of lymphoid cells. The mid-portion of the wall is occupied by bone formations. The bone-like areas are surrounded by dense fibrous tissue resembling periosteum. The in-

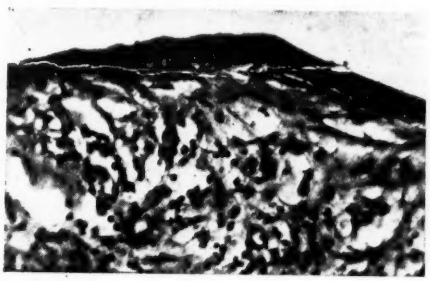


FIG. 5. Photomicrograph showing lining of cyst. About × 500.

*From the North Adams Hospital, North Adams, Mass.

†Crawford—Radiologist and Roentgenologist, North Adams Hospital. Kellert—Pathologist, North Adams Hospital. For records and addresses of authors see "This Week's Issue," page 1058.

ner layer, which contains considerable recent hemorrhage, resembles old granulation tissue. There are numerous capillary vessels, considerable fibrous tissue, many active fibroblasts, numerous plasma cells, polymorphonuclear leucocytes, a few lymphoid cells and eosinophiles. The lining of the cyst is composed of pink-staining hyalinized material infiltrated by large mononuclear and polymorphonuclear leucocytes, but epithelium and epithelial structures cannot be identified.

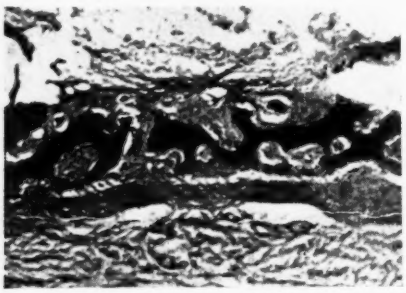


FIG. 6. Photomicrograph showing bone in wall of cyst. About × 100.

Because of the inflammatory changes present and the absence of any characteristic cell lining in the cyst, it is not possible to make a definite pathologic diagnosis as to the origin of the cyst*. It is very likely that if the specimen were a dermoid cyst portions of epidermal structures would persist and be recognizable despite the inflammatory changes. Other diagnoses possible are cyst of the turbinate, or adjoining bone cells or sinuses, of congenitally displaced nasal mucosa but with destruction of the characteristic epithelial lining due to inflammation.

The bone plaques present may be new bone formation but are more likely to represent portions of the wall of the orbit displaced and compressed by the growing cyst. No bone was found in the anterior portion of the cyst wall and in the radiograph one readily sees the outline of the enlarged orbit. In the specimen no bone was observed between the globe and cyst lining, thus suggesting that it was not a cystoid dilatation of the ethmoid cells or frontal sinus.

FIG. 7. Radiograph showing bone outline of cyst.

*There is no record of a Wassermann test having been performed.

THE PRESERVATION OF TEETH

Dr. C. R. Salmons, Chief, Division of Mouth Hygiene, Department of Health, State of Connecticut claims that the development of sound teeth is dependent upon diet in infancy and early childhood; that no system of brushing, polishing and filling can make good teeth out of teeth that were poorly formed or developed in the beginning. He claims that the enamel which is a protective layer covering the exposed portion of the tooth is fully formed and completed in the bones of the jaws long before the tooth is erupted. He also claims that no lime salts or other elements can be added in any appreciable quantities after nature's original development. It is a debatable question whether the enamel is not entirely inert and cut off completely from any of the nourishing fluids of the body, although, if this structure is weak, decay will start more readily and progress with greater rapidity.

THE IDEAL PUBLIC HEALTH ADMINISTRATOR

According to Dr. C. A. Harper, Health Officer, Board of Health, State of Wisconsin, if we combine a physician, a sanitation expert, a diplomat and a manipulator of the strong arm of the law into a single person, we shall have an efficient deputy State health officer. Dr. Harper feels that the task of interpreting the state health code to local authorities and to the public, figures largely in the program of the State health officers.

VACCINATION FOR YELLOW FEVER

Reports from Philadelphia dated April 30 show that sixteen persons have been successfully vaccinated against yellow fever, according to the belief of Drs. W. A. Sawyer, S. F. Kitchen and Wray Lloyd of the Rockefeller Foundation. This report was made to the Federation of American Societies for Experimental Biology. While the method is not yet ready to be used on large groups of people in yellow fever countries, it can be employed immediately to protect scientists working on the disease. Thirty-two yellow fever investigators contracted the disease within the last four years and five of them died. It was to meet this emergency that the Rockefeller Foundation worked energetically to develop a means of protecting their brother scientists. Besides the sixteen successful vaccinations in New York, three men in Africa and South America have been given protection against yellow fever.

MEDICAL PROGRESS

REPORT OF PROGRESS IN ORTHOPAEDIC SURGERY

BY WILLIAM A. ROGERS, M.D.*

TENDONS

RUPTURE of Tendons of the Hand (Mason, Michael L.: *Surg., Gynec., Obst.*, 50:611 March, 1930). Rupture of these tendons at any point other than at their insertions is very rare unless there be disease such as tuberculous tenosynovitis, gonorrhea, typhus fever, syphilis, gout or deforming arthritis. Indirect trauma usually results, if there be a tendon rupture, in the break occurring at the insertion. Very uncommonly direct trauma may result in tendon rupture, as with Colles' fractures (extensor longus pollicis) or some time after wrist sprain. Oft-repeated indirect trauma may result in an aseptic necrosis which goes on to frank rupture (as with drummer's palsy, waiters, tailors, furniture polishers, carpenters, rubber workers, and woodcarvers) and always involves the extensor longus pollicis, always at its two plane turn at the distal end of the dorsal carpal ligament.

These ruptures are more or less disabling depending upon occupation. The extensor tendons may rupture at their insertion at the base of the distal phalanx (baseball finger). Repair is possible only with hyperextension of this phalanx preferably with suture of tendon and joint capsule to bone. Or rupture may occur at the extensor insertion into the base of the middle phalanx where hyperextension following suture of tendon and joint capsule to the bone and drawing back and anchoring of the dislocated lateral expansions is indicated. In this latter rupture full restoration of function may not be expected.

In rupture of diseased tendons or of the extensor longus pollicis tendon, Mason advocates the autoplastic tendon graft taken from the dorsum of the foot, to fill the defect, as the method of choice.

Traumatic rupture of flexor tendons is very rare, very few being reported in the literature, undoubtedly due to their tremendous strength. Suture should be done.

Stenosing Tendovaginitis. Harry Finkelstein (*J. Bone & Joint Surg.*, 12:509 July, 1930) under this diagnosis, refers to an affliction chiefly involving the common sheath of the extensor pollicis brevis and abductor longus tendons at the radial styloid process, but believes that the essential pathologic process occurs in other tendon sheaths.

Clinically the condition is observed following acute or chronic trauma such as pain at the radial styloid, extending down the thumb and up the forearm, at times severe enough to incapacitate and interfere with sleep. More or less swelling may be observed and felt in the region of the tendon sheath, and there is local tenderness. Motions involving the gliding of these tendons are painful.

The pathologic findings are as follows: The sheath synovia may be thickened or destroyed and there is a mechanical obstruction or brake to the passage or gliding of the tendon in its sheath. Its pearly luster may be lost and the sheath may be brownish or reddish. The fascia about the sheath is thickened at times with increased vascularization, decrease in nuclei and hyalin transformation. At times there is effusion into the sheath. There may be fibrin coagulum upon the tendons which, in the affected portion, lose their gloss. There may be adhesions. The tendons may be swollen with chronic granulation tissue or may be fibrillated or thinned. Usually the tendon reveals no change. Beyond the point of obstruction the tendons may be bulbous.

The lesion, the authors believe, is not confined to the sheath of the abductor longus pollicis and extensor brevis, citing a similar lesion in extensor carpi ulnaris, flexor longus pollicis, extensor longus pollicis, extensor carpi radialis longior, flexor sublimis of fourth finger. The trigger finger probably falls into the same group.

The author produced the above changes experimentally in rabbits by the use of thermal, chemical and mechanical traumata.

Treatment—The acute cases and milder chronic ones may be successfully treated conservatively by means of a plaster fixation, for a period of four weeks. If relief is not obtained in this way, operative measures are indicated and success may be expected from simple incision of the sheath to removal of the greater part of it.

ASEPTIC BONE NECROSIS

D. B. Phemister (*J. Bone & Joint Surg.*, 12:769 October, 1930) has carefully studied the pathology involved in aseptic bone necrosis and lays down certain principles by which it may be clinically interpreted. Death of bone may occur aseptically from interruption of its blood supply, injury such as fracture, chemicals and radium. Its repair is in marked contrast with that of necrotic bone, dead through severe infection where absorption takes place through fibroblastic and fixed tissue phagocytic action,

*Rogers—Assistant Visiting Orthopaedic Surgeon, Massachusetts General Hospital. For record and address of author see "This Week's Issue," page 1058.

and sequestration is found when death occurs en masse. In aseptic necrosis absorption takes place through a process of revascularization and a simultaneous gradual laying down of new bone "creeping substitution" which replaces the dead. The completeness of this process varies with the amount of functional stimulation which the area receives, and the availability of osteogenetic elements.

Radium. When, in dogs, death of a portion of the femur is produced by the introduction of radium into the medulla, where fracture does not occur, there is very slow absorption and simultaneous replacement by new bone. That this process is extremely slow is explained by the author as being due to the burnt condition of the adjacent soft parts. If fracture occurs so that the limb is no longer used, gradual sequestration over one to two years results unless the necrotic bone came in contact with unburnt tissue when there is rapid absorption and replacement by new bone, provided it lies in the line of callus formation.

Frederic W. Bancroft (*Arch. Surg.* 5:646, 1922) using *croton oil* produced sequestration and involucrum with rapid and complete absorption of dead bone and replacement by new.

Interference with Circulation. The fate of necrotic bone resulting from this is one of gradual absorption and replacement by new bone varying in amount with the extent of its approximation to living bone and the amount of osteogenic tissue surviving about its periphery. This substitution may be complete or partial. Functional stimulation plays an important rôle in this process. If the necrotic bone is largely or wholly intra-articular and extensively bordered by articular cartilage the revascularization and transformation will be greatly reduced. Kienboch's and Legg-Perthes's disease following reduction of congenital dislocation of hip may fall in this group.

Operative interference with the blood supply, where the bone is extensively separated from soft parts and is severed, may result in extensive necrosis. This is illustrated by a case of arthroplasty of the hip for bone ankylosis following a pyogenic arthritis. The new head and neck through necrosis retained their pre-operative density by x-ray while the living trochanteric region and shaft rapidly underwent atrophy of disuse. Slowly over a period of fourteen months the necrotic area absorbed and there was a bone replacement but with some cavitation. This case has been checked on dogs particularly in the growing period where the same changes may be reproduced.

Fractures. Phemister believes that the very narrow zone of bone necrosis at fragment ends rapidly vascularizes and absorbs so that there is no appreciable difference in density between it and the rest of the fragment atrophying through disuse. In osteomalacia, osteogenesis imperfecta and in bone disease associated with parathyroid adenoma absorption of necrotic bone is far more rapid than new bone is formed creating a zone of diminished density.

In joint fractures such as the femoral neck, humeral head, capitellum, head of radius, neck of astragalus and carpal scaphoid, aseptic necrosis may occur, occasioned by injury to blood vessels and resulting in partial or complete necrosis. Death of the proximal fragment in femoral neck fracture predisposes to non-union but union with the dead head occurs in a considerable number of cases especially where there is impaction or an efficient reduction and fixation of fragments. Necrosis in these cases may be detected by the dense shadow cast on the roentgenogram as compared with the living fragment atrophied through disuse. Where non-union occurs the necrotic marrow is replaced by vascular connective tissue and eventually by bone marrow, but the necrotic bone is much more slowly absorbed and replaced by a variable amount of irregularly arranged living bone. "If too much weight is borne on the head before it has been transformed into new bone, its weight bearing portion may collapse with a resultant deformity and a poor functional result, but this may be averted by prolonged avoidance of weight bearing. The functional stimulation which comes from motion of the limb without weight bearing is sufficient to hasten transformation of the head."

With non-union, absorption and replacement of dead bone may either not occur at all or may go on very much more slowly. An ununited head may cast a shadow denser than the living fragment atrophied through disuse for one or two years. Eventually, absorption and partial replacement by new bone may occur. Rarely it is completely absorbed.

Bone Transplants. When bone is transplanted, it is the general consensus that the bone cells within the lacunae die. The unossified osteogenic elements of the periphery and the vascular canals may survive. The extent to which these elements participate in the transformation of the necrotic bone depends upon the functional demand placed upon the graft and the site to which it is moved. They proliferate and play an active rôle in the transformation into living bone when the transplant is used as a bone graft. The osteogenic elements of adjacent bone also participate.

If the transplant be placed in soft parts away from the skeleton, serving no supporting function, there is temporary activity of its osteogenic elements but this is soon followed by shrinkage in volume and very slow ultimate disappearance

over months or years. Or it may survive as a smaller rounded very spongy bone.

A full thickness graft fixed at one end by insertion into the medullary cavity and serving to fill a bone defect undergoes an absorption and simultaneous replacement by new bone, rapid through the functional demands placed upon it.

THE INTERVERTEBRAL NUCLEUS PULPOSUS

J. Calvé and M. Galland, Berch-Plage, France (*J. Bone & Joint Surg.* 12:555 July, 1930) describe the normal transmission of force in the vertebral column as being influenced primarily by the Nucleus Pulposus. Stated simply the column behaves according to the law of elastic transmission. The vertebrae are in contact along the length of the column by the interposition of the highly elastic nucleus pulposus. Any bend is accompanied by a pressure force on the concave side and an equal distracting or depression force on the convex side while the force of gravity falls through the Nucleus Pulposus, which lies in the axis of motion.

Pathologically, if the nucleus is destroyed, the column behaves according to the law of transmission of force through a curved, non-elastic column. The force of gravity falls on the concave side of the column, i.e., anterior in dorsal, diffused equally in lumbar, and posterior in lumbosacral regions. The axis of motion then falls along the posterior process articulations.

Again, if the Nucleus remains intact and there is softening of the bone, as in osteomalacia or some form of localized osteoporosis, the vertebrae becomes biconcave, and the nucleus spherical, if the resistance of the former falls below the pressure of the latter.

Thirdly, if the nucleus preserves its pressure and its normal slight mobility, conditions may arise to bring about a slow progressive displacement—always toward the more spacious side of the disc. Normally the nucleus lies midway between the anterior wall of the vertebral body and the posterior process articulations. Especially limiting are the forward or backward displacements, since then the nucleus serves as a block rather than a fulcrum.

The authors discuss four clinical entities which are wrapped up essentially with the nucleus pulposus:—

1. Calcification of this structure—without special clinical significance.

2. Retropulsion of the nucleus. The authors subdivide this group into (a) those cases where the nucleus has gradually migrated posteriorly, subsequent to a failure of ossification in the antero-superior and inferior epiphyses. In these cases its position may be detected by roentgenograms which reveal a localized kyphos and depressions in the adjacent vertebrae, corresponding to the position of the nucleus.

(b) This group reveals localized kyphosis, nuclear retropulsion, and paraplegia. In this group the authors believe that the retropulsion of the nucleus is the primary factor and that such retropulsion is severe.

3. Rounded discs (fish-tail vertebrae)—These connote to the authors that vertebral bone resistance is lowered, allowing the nucleus to become spherical through its power of elasticity.

4. Herniation of the nucleus pulposus into the vertebral body always follows a rupture of the cartilage. It is a frequent lesion, according to the authors. In adults there is preceding its rupture a degeneration of the cartilage; in adolescents a "peculiar frequency" of unfinished conversion of cartilage to bone. These hernias vary widely in size and shape. The nucleus loses its elasticity through conversion into fibrous tissue. The vertebral body, at first rarefied at the point of herniation, later limits the lesion on its periphery by an opposing barrier of condensing osteitis. Subsequently the body tends to become wedge-shaped.

Clinically most of these lesions seem to produce no symptoms, other than those of static fault. The authors believe that many of the adolescent kyphoses classed as epiphysitis belong in this herniation group.

HYPERPARATHYROIDISM

Twelve cases showing parathyroid tumor, or hyperparathyroidism, accompanied by change in the calcium metabolism and exhibiting outstanding general constitutional and bone changes, one of whom is presented by the author, are carefully reviewed by Edward L. Compere (*Surg. Gynec. Obst.* 50:783 May, 1930).

The bone changes were diagnosed by roentgenograms as osteitis fibrosa cystica, osteomalacia, osteodystrophia cystica, late rickets, and in one case with osteitis fibrosa cystica there were diagnosed giant cell tumors of bone.

Disturbances in calcium metabolism were evidenced by high blood calcium and calcium output in excess of the intake.

The constitutional disturbances are described as progressive muscular weakness, general lassitude, and pain and bowing of the weight bearing extremities.

In 8 of the 12 cases parathyroid adenomata were removed surgically; in 2 no tumor was found; and in 2 no operation was performed, but in one of the latter there were bilateral palpable tumors. Improvement followed operation in 9 of the 10 operated cases. One of the operated cases died in tetany.

The authors are inclined to the belief that the condition is one showing hyperparathyroidism.

VASCULAR DISEASE

In order to avoid major amputation so frequently necessary because of pain in obliterative

vascular lesions of the extremities, R. H. Smithwick and J. C. White (*Surg. Gynec. Obst.* 51: 394 Sept., 1930) advocate the injection of 95% alcohol into the sensory nerve or nerves, in the region of the calf, and in amounts varying from ¾ to 1½ c.c. for the larger nerves. (The smaller nerves may be interrupted by simply crushing with a hemostat.) This treatment has resulted in disappearance of the pain, allowing careful dakinization of and cutting away of necrotic tissue from the lesions, and the institution of exercises to establish collateral circulation. Morphine could be withheld and the patients have regained their morale. Six of the 11 patients in their series were saved seemingly inevitable major amputation and healed their lesions. All were relieved of pain. The anatomic distribution of the nerves is given in detail.

INFANTILE PARALYSIS

Bone-block Operation for Drop Foot. W. C. Campbell (*J. Bone & Joint Surg.* 12:317 April, 1930) presents an end-result series of 225 cases treated by his operation for drop foot. A preliminary report of this operation he first made in 1923, subsequently reporting further in 1925 and 1927.

His procedure, employed by him after an experience of over 300 cases, consists in the establishment of a bone mass attached to the fused astragalus and os calcis across the posterior half inch of the ankle joint and rising upward to lie against the posterior surface of the tibia. In this way the ankle is blocked at about 10° plantar flexion, but is free in dorsiflexion. The incision passes inward from behind to the posterior margin of the astragalus, either around the tendo achillis or through it if tendon lengthening is indicated. The posterior half inch of the astragalus is removed, a cavity made in the superior surface of the os calcis opposite the posterior portion of the articular surface of the tibia, and a subastragalar arthrodesis is done with the ankle at 90°. A cavernous or spongy bone mass is placed in the cavity of the os calcis and around this are placed small pieces in the form of a pyramid, extending upward about 1 inch against the posterior wall of the tibia. The part is put up in plaster for 8 weeks, after which a brace is worn checking plantar flexion for 6 months.

Results reveal that 211 of 225 end-result cases showed an efficient bone block at 10° of plantar flexion, and 14 showed a deficient block. There was pain in 4 of 225 cases. There was not a single case of arthritis.

FRACTURES

Vertebral Bodies. The time has passed when the uncomplicated compression fracture of the vertebral body should remain uncorrected in the hands of the orthopaedic surgeon.

Three methods of reduction have recently been presented to the profession which in their authors' hands have consistently produced satisfactory results. Extreme hyperextension is the keynote of treatment.

Arthur G. Davis (*J. Bone & Joint Surg.* 11: 133 Jan., 1929) advocates manipulative reduction under ether anesthesia, followed by eight weeks' recumbency in plaster shells, and two months of back brace support. His manipulation is carried out through the agency of a rope fastened to the ankles and passing through a pulley above. The patient, anesthetized and lying prone on the operating table, is raised by the ankles until the pelvis is a few inches off the table. In this way complete hyperextension is obtained. The shells are then made with the patient in the corrected position.

William A. Rogers (*Surg. Gynec. Obst.* 50: 101 Jan., 1930) obtains reduction by complete hyperextension of the vertebral column gradually over a period of about a week, without anesthesia, and by means of a frame made of spring steel bands broad side horizontal across which canvas is stretched as with the Bradford frame and upon which the patient lies supine, as the frame is rendered convex upward the spine is extended and gravity acts as the correcting force. In this way the patient gradually becomes adjusted and accustomed to the extreme position necessary for reduction in all these cases. The method always completely under control with a conscious patient presents no risk of injury to the cord.

R. Watson Jones' method (*Brit. M. J.* 1:300 Feb. 21, 1931) is essentially manipulation without anesthesia. The patient's torso hangs suspended between two tables, one under the lower extremities, the other about two feet higher, is under the folded arms and chin. In this position, which suggests perturbation if not hazard a jacket is applied to the patient who is then soon rendered ambulatory.

NOTE: The use of ambulatory jackets in these cases has been under study at the Massachusetts General Hospital for the past three years, and has been found to be safe in many of the cases. Where, however, there is extensive lateral tilting of the crushed body or the fracture line extends well back into the posterior wall of the body or centrum, its use is contraindicated. Jackets are likewise inadequate in fractures above the ninth to eleventh dorsal vertebrae.

Fracture of Neck of Femur (intracapsular).

1. End result series analysis—A. W. Reggio (*J. Bone & Joint Surg.* 12:819 Oct., 1930) has conducted an interesting study of the result obtained in 59 consecutive cases treated on the Fracture Service of the Massachusetts General Hospital between 1921 and 1927.

He finds deaths 31%, good (70% or better functionally) 37%, fair (40-70% functionally)

12%, bad (0-40% functionally) 20%, union 49%, non-union 20%. The Whitman treatment was employed in 73% of these cases, most of the others being regarded as too poor risks for plaster immobilization. This series vividly points out the uncertainties of prognosis in this type of fracture.

2. E. W. Hey Groves (*J. Bone & Joint Surg.* 12:1 Jan., 1930) calls attention to the extreme difficulty of demonstrating the presence or absence of impaction in these fractures by x-ray, implying the frequency of serious error from this. He comments upon the relatively bad results obtained even in the most experienced hands in these cases when he analyzes one hundred and sixteen cases efficiently treated in British Hospitals where there were deaths 15.5% non-union in 23% and only a fair, poor or bad result obtained in 53.3%. He reiterates the statement of all experienced in this type of fracture that traction methods should be discarded.

Hey Groves recognizes two methods of choice in the fresh case, the Whitman or open reduction with beef bone or ivory pegging (3/8″). With each method in his own hands he has met with failure in 25%. In discussing the late cases he states that union is detectable clinically and by x-ray in three months. If non-union, then what? Again he advocates pegging or the Whitman reconstruction. With the latter he offers a slight modification, that of raising a flap of the anterior capsule with its bone attachment, the base of which is at the acetabulum, and reattaching this further outward to hold the bone firmly in the acetabulum.

Non and Delayed Union. H. E. Pearse, Jr., and J. J. Morton (*J. Bone & Joint Surg.* 12:97 Jan., 1930) investigating the influence of venous stasis on bone growth and healing of fractures conclude that stimulation of the former and acceleration of the latter results.

Paré in the 16th century, V. Dumreicher first published by Nicoladoni in 1875 and finally Thomas in 1886 independently discovered the venous stasis treatment of non-union, which Bier later stressed. Other evidences of bone activity stimulation following venous stasis are the bone changes noted about chronic ulcer in the young, irritation of the periosteum, foreign bodies, arteriovenous aneurisms and varicose veins, the stasis of cardiac failure and arteriosclerotic extremities. The influence of the sympathetic nervous system on bone is likewise suggested. Experimentally the fibulae, right and left, of twelve dogs were subjected to subperiosteal excision of two to four millimeters of the bone. On one side the popliteal vein was ligated (this vein drains the bone) on the other side the circulation was unaltered. In every instance union was substantially accelerated on the side of vein ligation.

Fracture of Acetabulum. In the perforating types where the femoral head has been forced through into the pelvis, W. R. Cubbins, A. H. Conley and J. J. Callahan (*Surg. Gynec. Obst.* 51:387 Sept., 1930) advocate, following manual reduction, Buck's extension for the longitudinal traction to maintain reduction and for the necessary lateral traction, skeletal traction of fifteen pounds applied to a four inch wood screw introduced through a longitudinal incision into the femur just below the greater trochanter, in the line of the neck and protruding through the wound.

Fractures. Bone union and *irradiated ergosterol—Swart* (*J. Bone & Joint Surg.* 12:360 April, 1930) found that the oral administration of this drug had no influence on bone union in a large series of laboratory rabbits and rats.

Baseball Pitcher's Elbow (Fracture head of Radius). Under this name, F. J. Kirby (*J. A. M. A.* 95:404 August 9, 1930) describes a fracture of the head of the radius on its posterolateral margin which he encountered in four cases. In each of these the injury occurred in pitchers in the act of pitching in a baseball game.

The fracture results from sudden violent jamming of the head of the radius against the lateral condyle of the humerus, in the act of extension of the elbow and pronation of the forearm. The fragments in his series varied in size from that of a coffee bean to an almond, and were composed of cartilage with some bone. Roentgenograms revealed the fragment in but one of the series of four. In all the fragment could be manipulated into the small recess of the joint just behind the head of radius and humeral condyle.

Excision of the fragment gave a satisfactory result in all four cases.

ARTHRITIS

The results of sympathectomy, performed in a series of six cases of rheumatoid arthritis over the years 1926-1929 are reported by A. W. Adson and J. G. Rowntree (*Surg. Gynec. Obst.* 50:204 January, 1930). The procedure consisted in second, third, and fourth lumbar ganglionectomy and intervening trunk resection for the lower extremity and second and first thoracic and lower cervical ganglionectomy and trunk resection for the upper. All six patients were improved, several in a dramatic manner. The six patients selected exhibited intense vasomotor instability in the affected extremities, marked periarticular thickening and relatively minor (as far as can be judged from the report) destructive and hypertrophic changes. All had run the gamut of standard arthritis treatment without arrest of the onward course of the disease.

The authors offer as their rationale for per-

forming bilateral sympathetic ganglionectomy and trunk resection in these six cases:

(1) The similarity of the intense vasospastic condition in the extremities involved in these six cases to that seen in Raynaud's disease which has been demonstrated to respond so satisfactorily to sympathectomy.

(2) The progressive nature of the disease in these cases resisting all standard methods of treatment to a point verging upon hopelessness.

(3) The hope that the sustained elevation of temperature of the extremities which always follows such sympathectomy might improve or even arrest the condition.

The authors suggest the possibility of the arthritic process being the result of the vascular derangement. As to this suggestion it should be borne in mind that the great majority of arthritics do not exhibit the intense vasomotor instability seen in these cases and conversely arthritis is not remarkably more common among patients suffering from intense vasomotor disorder than among those not so afflicted. The very small number of cases operated upon (six in four years) seems to attest to this observation. It is probable that these patients upon whom the author reports and whose infirmities yielded so well to sympathectomy belong in the class of sympathetic vascular disorders rather than rheumatoid arthritic disease. If a connection exists, is it not just as possible in the light of the findings that in the course of the arthritic process the sympathetic nervous apparatus became deranged?

TUBERCULOSIS

Winthrop M. Phelps (*J. Bone & Joint Surg.* 12:253 April, 1930) considering the specificity in rickets of the ultraviolet spectrum band between 300 and 313 millimicrons calls attention to the importance of the band between 320 and 380 in the treatment of tuberculosis. This band is found at sea level cities as well as in the mountains where alone the shorter wave lengths are found. The author points out the similarity of improvement in tuberculosis patients where light is equally well used as an adjunct to a sound antituberculosis régime in various localities and also at sea level cities.

Longer exposures are possible with this band if the erythema and tan-producing rays (300-320) are absent and for this reason the author believes with greater effect. The band is present in carbon arcs of 25 or more amperes where the carbon used is of known spectral distribution. He believes the effect is an indirect one on the tuberculous focus, that is, general rather than local, and acts as an accelerator of the repair process.

Phelps furthermore offers an accurate means of calibration for dosage purposes of the efficacious spectral band where the correct carbon arcs are used and indicates the equal efficacy and the availability of this agency as compared with the uncertain and so often absent sun's rays.

OPERATIONS

Genu Recurvatum. Leo Mayer (*J. Bone & Joint Surg.* 12:845 Oct., 1930) describes an operation the scope of which he limits to hyperextension beyond 25 degrees and which depends for its successful outcome upon a bone graft fusion between patella and tibia. This results in a bone block to abnormal hyperextension the action of which he likens to that of the olecranon blocking abnormal extension in the elbow, an analogy likewise pointed out by Dr. Willis Campbell in connection with his bone block for drop foot. He reports 12 cases in none of which was there failure to correct the condition, in none did a painful knee result. In one, the graft hypertrophied to such a degree that it ultimately blocked extension at 10 degrees, permanent flexion requiring a later partial excision of graft to allow restoration of complete extension. Flexion range varied between 25 degrees and 135 degrees. He attributes the invariable permanence of the graft in these 12 cases to its being not intra-, but essentially extra-articular.

Operative technique is as follows: Through a vertical midline incision the capsule is divided through an inverted v the apex of which is just above the patella, and the flap turned down. A 1½ inch osteotome is then driven vertically downward into the tibia between the anterior crucial ligament attachment and the coronary ligament for a distance of about one inch and that portion of the tibia anterior to the chisel is pried gently forward. The graft, about 2¼ inches long, 1¼ inches wide and 3/16 inches deep is slightly tapered at one end for ease in introducing it into the tibia. The smooth side faces the femur, the rough side the patella which is denuded of cartilage and will fall snugly against the rough side of the graft. The wound is closed in layers, and the part put up for 4 weeks in 135 degrees of extension.

Arthrodesis of Shoulder (J. Albert Key: *Surg. Gynec. Obst.* 50:468 Feb., 1930). The Codman sabre cut incision is used, and the deltoid with osteotomized acromion are turned down. The upper portion of capsule is excised. The long head of biceps is detached from glenoid and sutured to its sheath. The glenoid, acromion, and head of the humerus are denuded of cartilage, and diseased bone if present is excised. The periosteum is raised from the scapula around the margins of the glenoid from the deep surface of acromion and from the upper end of the humerus. A small drill hole is then made in the acromion near the site of osteotomy and another

in the spine of the scapula, near the cut edge, for use in holding the acromion in place. Two inch osteoperiosteal grafts are then inserted around glenoid beneath the raised scapular periosteum protruding like the petals of a flower, and into this osteoperiosteal cup, and against the glenoid, the denuded head of the humerus is placed. In tubercular cases where the head of the humerus is sufficiently intact, a nail is then driven into the head and centre of the glenoid to provide fixation. This nail protrudes through a stab wound in the skin for incorporation in the plaster, and subsequent removal. The acromion is then sutured to the clavicle, and a piece of chromic catgut, passed through the previously drilled holes, fixes the other end to the spine of scapula. Closure is in layers with a plaster spica.

Arthrodesis of the Sacro-iliac and Lumbosacral Joints (*Campbell, W. C.: Surg. Gynec. Obst.* 51:381 Sept., 1930). The procedures described are modifications of those published by the author in 1927 (Ibid. Vol. 45, 218). These are extra-articular. That for the sacro-iliac joint consists of incision along the posterior-iliac crest which is then freed, subperiosteally, on its superior and lateral surfaces. After removal of a portion of the crest to serve as a graft, the sacral surface of the ilium lying posterior to the sacro-iliac joint is denuded of all vestiges of fibrous tissue, and this dissection is also made to include the adjacent surface of sacrum lying beneath the muscles. Into this freshened bone groove between ilium and sacrum are packed the iliac crest graft and numerous chip grafts from the other exposed surfaces of ilium. The wound is then closed in layers.

When combined lumbosacral and sacro-iliac arthrodesis is indicated, the transverse process of the fifth lumbar vertebra, lying just proximal to the groove, may be exposed and the iliac crest graft made to extend upward against the denuded anterior surface of this structure.

Modified "Shelf" Operation for Congenital Hip Dislocation is presented by Robert Soutter (*Surg. Gynec. Obst.* 51:249 Aug., 1930). A transverse slot is made in the ilium just above the true or site of the false acetabulum into which a thick graft taken from the neck, great trochanter and shaft of the femur is driven. A portion of the outer table of the ilium is freed from below upward and swung out to firmly fix the shelf, thus created, against the upward thrust of the femoral head. The author states that the triangular space thus left within these bone walls fills with bone. He has performed this operation 9 times in the past 3 years with substantial benefit to the patient.

MORTALITY RATES

Telegraphic returns from 85 cities with a total population of thirty-seven million for the week ending April 30, indicate a mortality rate of 11.6 as against a rate of 12.0 for the corresponding week of last year. The highest rate (19.3) appears for Utica, N. Y., and the lowest (6.5) for Akron, Ohio, and Flint, Mich. The highest infant mortality rate (28.2) appears for Somerville, Mass., and the lowest for Bridgeport, Conn., Fort Wayne, Ind., and South Bend, Ind., which reported no infant mortality.

The annual rate for 85 cities is 12.5 for the seventeen weeks of 1932, as against a rate of 13.7 for the corresponding period of the previous year.

REFORMS IN MEDICAL EDUCATION

Secretary Ray Lyman Wilbur of the Interior informed members of the American Council on Education at its meeting May 6 at Washington, D. C., that universities and medical school faculties must declare for independence and must be set free to meet the scientific advances of medicine. He felt that both faculties and students are bound by curriculum requirements and practices in education which do not meet the pressing demands of the profession. The student is "overstuffed" and because the professors are ambitious to build up their own courses, medical education attempts to turn a student into a walking encyclopedia of facts. The present course of four years in many of the colleges is not sufficient for the student to fulfill the requirements as set forth in the curricula. Freedom in educational matters should be established within the university and among the faculty and not dictated by licensing boards. The fundamental purpose of medical education should be to train students for clinical practice. An important feature of medical education is that it must allow for individual choices by the student and reconsider its entrance requirements in order to allow him freedom in the development of his particular interests. Secretary Wilbur expressed doubt of the practical value of many requirements now found in medical education.

HOSPITALS OPPOSE CHILD FINGERPRINTS

At a session of the annual conference of the Hospital Association of the State of New York the delegates almost unanimously voted in opposition to fingerprinting methods as applied to infants. It was claimed that this device has not been definitely established as a positive means of identification among infants. Ernest G. McKay of Elmira, chairman of the committee, pointed out that the fingerprint of a new born child could not be clearly reproduced nor could it be recorded immediately at birth. The necessity of an outside agent to make this identification was also advanced as an objectionable feature.

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 18201

ISCHIORECTAL ABSCESS — A FIRST SIGN OF CARCINOMA OF THE RECTUM

SURGICAL DEPARTMENT

PRESENTATION OF CASE

DR. LOGAN H. ROOTS*: This is the case of a sixty-eight year old married American wood cutter.

He had been in the best of health all his life. He disclaimed any previous illness.

His chief complaint was of soreness of the rectum of three months' duration, beginning with what he called "piles"—large hard lumps which came out from his anus. There was no bleeding, and not very much soreness until five days before entry, when the inside of his rectum, chiefly the left side, became very sore and it was hard for him to sit down. There was oozing of soft fecal material between bowel movements. There was still no bleeding. For three or four days he had been unable to move his bowels—a very sudden change for him. For several weeks before that time he had had considerable frequency of micturition and burning during the day only.

His past history is interesting for only three things: his very good health, daily bowel movements all his life, and the fact—this may or may not be of interest—that at ten years of age he had been pushed over backward on a stump which had entered his rectum. There had been soreness and much bleeding. The condition cleared up, however, with gradual return of normal bowel movements.

He came into the Emergency Ward, where physical examination was negative except for the rectum, which on the left side was very hard and red and so tender that one could not get a finger up more than about an inch. For that whole inch the wall was hard and irregular; not ulcerated so far as we could tell.

Laboratory work was negative. There was no sugar in the urine. There was a white blood cell count of 14,000.

The abscess on the left side was drained under ether on the day of entry. Not much pus came out, but there was a good deal of necrotic tissue.

*Second junior interne on the West Surgical service.

A biopsy done at that time was reported adenoma. On July 13 another biopsy was done under spinal anesthesia and reported as colloid carcinoma.

On the twenty-first a first stage abdominoperineal operation was done. The liver was normal. The pelvic peritoneum was involved by the growth. A loop colostomy was done.

His immediate convalescence was fair. The colostomy was opened with the cautery on the second day and worked well thereafter. He became slightly irrational at times without any cause that we could find except that there were occasional râles at one base. On July 30 another ischiorectal abscess in the right iliac fossa had to be drained. There was a good deal of pus at that time. The chart was irregular. On the whole he seemed to be getting a great deal better. On August 11 he was seen by Dr. Hayden, who had operated on him. It was decided that the patient was convalescing so well that he might go out on the porch. We are not sure as to whether he actually went out or not. He began to get worse that afternoon. His pulse, temperature and respirations all went up and there were râles at both bases. He died that night.

DR. GEORGE W. HOLMES: These are portable films taken on July 24. They show a rather high sharply domed diaphragm on both sides and a tortuous prominent aorta. I see nothing definite in the lungs. The right apex is certainly less radiant than the left, but the patient was rotated and there is a good deal of motion. From such a film I do not think we are justified in saying there is anything abnormal in the lungs. If there is anything it would be an old lesion, probably tuberculous.

CLINICAL DISCUSSION

DR. E. PARKER HAYDEN: This man had an anal fistula with abscess secondary to his cancer. I drained the abscess first, using a left posterior incision. The infection later spread around to the other side of the rectum. At first glance the case would not be considered a favorable one for radical resection for cancer, but I felt that it was advisable to look inside the abdomen and find out the exact situation. On abdominal exploration it seemed as though radical resection might be done, and it was undertaken as a palliative operation. I performed the first stage of Dr. Daniel F. Jones's two stage resection. After dissecting deep in the pelvis it was obvious that the growth was rather extensive and it was rather questionable how successful the rest of the operation would be. The abscess occurred on the other side during the interval between the two stages. It was drained, and the patient became very sick. We had almost decided that it would not be wise to attempt to remove the growth, when he appeared to improve and it

looked as though it might still be done. Then suddenly he died.

This is certainly a case in which in the light of subsequent events there is considerable question whether operation should have been done. Dr. Jones's feeling has been that if one can get the growth out safely, even though the case be advanced and not a favorable one for cure the effort is yet worth while for the comfort it brings to the patient during his remaining months. A desire to accomplish this for the patient prompted me to undertake the operation.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Carcinoma of the rectum.
Ischiorectal abscess.
Bronchopneumonia.

ANATOMIC DIAGNOSES

Colloid carcinoma of the rectum.
Ischiorectal abscess.
Operative wounds: colostomy; drainage of inguinal abscess.
Early bronchopneumonia.
Arteriosclerosis.
Fibrous pleuritis.
Cholelithiasis.
Cholesterosis of the gall bladder.
Diverticula of the sigmoid.
Hemangioma of the liver.

PATHOLOGIC DISCUSSION

Dr. Tracy B. Mallory: At autopsy we found a fairly extensive annular carcinoma entirely limited to the pelvis. There was some invasion of the perirectal tissue, but I think the actual size of the tumor mass was considerably less than Dr. Hayden in all probability estimated at operation, because there was very extensive perirectal sepsis which made the tumor mass seem larger than it actually was. I think also from that point of view that it would have been a very difficult case to treat radically, because almost certainly in an attempt to carry out the second stage of the operation, to resect the tumor, one would have stirred up this perirectal abscess to the point of generalized sepsis. The operation so far as it had been carried was apparently perfectly successful. The pelvis had been properly closed off. There was no peritonitis.

The immediate cause of death was bronchopneumonia.

I have a section of the tumor here. A very large part of the tumor consists of great masses of mucus in which there is only an occasional tumor cell to be found floating,—in other words a perfectly typical colloid carcinoma of the rectum, a type which experience has fairly well proved has on the whole the lowest chance of cure of any of the types of cancer that we find in this region. We recently had a talk here from a visiting English surgeon, Mr. A. Lawrence Abel, with a great deal of experience of cancer of the rectum. He confirmed the opinion which we already had that colloid carcinomas are very unfavorable ones for operation. He also made the statement that he felt colloid carcinomas are in the very late degenerative stage of cancer. To that particular point I am inclined to take exception. Here is a very small, very early cancer of the large bowel, one of the earliest I have ever seen, which was picked up accidentally at an autopsy. The patient had given no symptoms referable to it whatever. There is a normal mucous membrane secreting perhaps a little more mucus than usual, and this very tiny colloid carcinoma. The whole thing is not more than 3 millimeters in diameter, but it is already invading the muscle. So even in the earliest stage of beginning cancer it may be of the colloid type. I rather think that when these tumors are colloid in type they are colloid from the very start.

A Physician: How common is neighborhood inflammation about cancer of the rectum?

Dr. Mallory: I should say it is neither common nor rare. On the whole I do not see it very often, but I am sure I have seen it in some cases. Perhaps some of the surgeons could answer that better than I can. How often do you have perirectal sepsis from perforation of cancer of the rectum, as in this case?

Dr. William M. Shedden: I should say perirectal abscess is very uncommon; perirectal inflammation not uncommon.

Dr. Hayden: It has been generally recognized that in estimating the operability of a cancer of the rectum which is quite large and fixed one has to take into consideration the fact that some of this fixation may be due to inflammation rather than to extension of the growth. Abscess formation is not common, but when it does occur it is either due to perforation of a high growth or in the case of a low growth to extension of the disease into the ischiorectal fossa with introduction of infection from the bowel.

CASE 18202

A CASE OF DYSPHAGIA

Eye and Ear Infirmary

PRESENTATION OF CASE

Dr. George E. Shambaugh*: This is the case of a man sixty-nine years old.

He gave a history that five months before admission he began to have hoarseness and difficulty in swallowing. He was in another hospital two and a half months before he came here. There they found a mass in the larynx which looked like carcinoma. He was given x-ray treatment and potassium iodide. Under this

*Resident at the Eye and Ear Infirmary.

treatment the mass entirely disappeared, although he continued to have hoarseness and difficulty in swallowing. He also had bloody stools for two months, and bloody diarrhea. He was sent to the Emergency Ward for antiluetic treatment.

On admission to the Emergency Ward a throat consultation was asked for and obtained. Examination of the throat showed no mass at all. The vocal cords failed to come together normally. The patient was very pale and weak and in no condition for esophagoscopy, so we did not advise admission on the Throat service. He was discharged to the Outpatient Department.

He appeared in the Outpatient Throat Clinic and was seen by a visiting man who knew nothing of his former history.

He was admitted to the Throat service, where I saw him an hour or two after admission. We immediately put in a request for a medical consultation. The patient was very weak. He passed bloody stools every hour or two. The medical consultant did a rectal examination and found a small mass. A surgical consultant found a large carcinomatous mass in the rectum involving the anterior wall and the base of the bladder. He did a proctoscopic examination and found carcinoma involving the anterior wall of the rectum, but said the patient was too near death to warrant doing anything further. A Hinton was strongly positive. The patient died four days after admission.

Dr. George W. Holmes: These films were taken by Dr. MacMillan at the Eye and Ear Infirmary. I am sorry he is not here to demonstrate them. The report is, "Marked filling defect on the right side of the pharynx and upper esophagus, probably due to a mass in this region. The chest is clear. There is no evidence of metastases." The film shows some displacement of the esophagus. With obstruction of the esophagus there is often regurgitation into the trachea. This I presume is the area which was localized fluoroscopically. The filling defect has a rather lobulated ragged margin which is perfectly consistent with a mass outside pressing against this region of the esophagus. I should think a mass of that size if centrally located would produce more obstruction than this has.

This is a lateral film of the neck and shows barium on the tongue, but there is no barium in the esophagus.

Dr. Edward D. Churchill: This man was practically moribund when I saw him in the Eye and Ear Infirmary. I think the case is an illustration of the old adage that one's first duty as a consultant is to do a rectal examination, because a great deal of study had been done at the upper end of the gastro-intestinal tract but none at the lower end. He had a huge mass involving the anterior wall of the rectum. Whether or not it originated in the rectum we could not be sure; at least it had ulcerated into it. The condition was obviously inoperable, and the man dying. We did not even attempt a palliative operation.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Carcinoma of the rectum.
Lues of the esophagus.

ANATOMIC DIAGNOSES

Carcinoma of the prostate with extension to the rectum, the pelvic peritoneum, the bladder, the right ureter and possibly the seminal vessels.
Metastases to the diaphragm, the iliac and retroperitoneal glands, the liver, the pericardium and the lung.
Hydronephrosis on the right.
Chronic vascular nephritis.
Pulmonary edema.
Arteriosclerosis.
Coronary sclerosis.
Old healed infarct of the heart.
Acute endocarditis.
Carcinoid of the intestine.
Infarct of the heart.

PATHOLOGIC DISCUSSION

Dr. Tracy B. Mallory: I included this case today on account of its bizarrerie. It is a case of cancer of the prostate, and as the presenting symptoms were dysphagia and hoarseness, it seems fair to consider it somewhat of a rarity.

He had a very large prostatic tumor which had invaded the posterior rectal wall. At the time of autopsy my assistants and I disagreed as to whether it was primary in the prostate or the rectum, but with the aid of the microscopic sections I think there is now no doubt whatever that it was primary in the prostate. The entire prostate was completely replaced by tumor. The rectal mucosa was relatively slightly involved, but it was invaded at the point from which the hemorrhage was occurring.

For the symptoms of dysphagia and hoarseness and the apparently positive x-rays I have not the slightest anatomic explanation. We did a completely negative dissection, took out the entire esophagus from end to end. I opened it under Dr. Mosher's eye and we could find nothing. My best guess is that we are dealing with a very anemic man and that it was possibly a case of Plummer-Vinson syndrome. Usually those cases have an esophageal web. This patient however had had a fairly radical examination, and it may be that the web, if it had ever been present, had been ruptured.

A Physician: Did he have a smooth tongue?

Dr. Mallory: It seemed a little smooth but not very strikingly so.

One totally incidental finding of some interest was a typical carcinoid tumor of the small

intestine. One occasionally sees them in the ileum, but not often. I do not think that it had anything to do with the symptoms at any time.

Both kidneys showed a well marked vascular nephritis and one a hydronephrosis obviously secondary to occlusion of the ureter by the carcinoma. There was a marked arteriosclerosis with involvement of the coronaries and an old infarction of the heart. I do not believe however that this had anything to do with his death.

CASE 18203

INTESTINAL OBSTRUCTION FOLLOWING EXCISION OF THE RECTUM

Surgical Department

Presentation of Case

Dr. Clifford C. Franseen*: *First admission.* This patient was a fifty-one year old Canadian laborer who entered complaining of burning and pain in the rectum of a year's duration.

One year before admission he first noticed occasional blood in his bowel movements, ascribing this to hemorrhoids, which he said he had had all his life. Eight months before admission he had a burning sensation in his rectum lasting fifteen minutes to an hour after each bowel movement. For ten months the bleeding had been more profuse; he passed as much as a cupful at a time, but this would occur only once or twice a week. He had used a great many cathartics because without them he never had more than one bowel movement every third day. He had lost 10 pounds in weight in the four months before admission.

Examination of the heart and lungs was negative. The teeth were very carious. The only significant findings were those on rectal examination. The rectum would admit only the tip of the finger. There was an annular cauliflower-like growth just inside the rectum, not particularly fixed.

The red blood cell count was 5,000,000, the hemoglobin 75 per cent, the white cell count 29,000. The smear showed 92 per cent polymorphonuclears. A guaiac test on the stool was only faintly positive. The non-protein nitrogen was 29. A Hinton test was negative.

A first stage loop colostomy was done. No metastases were found in the liver or the lymphatics. The colostomy was opened on the third day. He made a fair convalescence. On the eighth day the second stage was done under spinal anesthesia. He was discharged on the thirty-fourth day after operation with the colostomy working well.

*Senior interne on the West Surgical service.

History of interval. He was seen about two months later, when the colostomy was working well, and he was well satisfied with his condition.

Six months after he left the hospital he entered the Emergency Ward again. He had gone clamming four days before admission and had eaten clams for three consecutive meals. Two days before admission he had midabdominal pains and vomiting. He thought he had had a bowel movement two days before admission and none since.

Second admission. When he came in his condition was not very different from what it had been six months earlier. He was not particularly emaciated. The abdomen was not markedly distended, but there was some spasm. No masses were felt. There was some visible peristalsis.

Laparotomy was done, and an entero-enterostomy performed. A dilated loop was anastomosed with a collapsed loop. He was transfused after operation and at that time was in fairly good condition. The non-protein nitrogen was 57, the chlorides 536.

Three days later the bowel was obstructed again. A catheter was put into the distended loop. Two days later the non-protein nitrogen was 120, the chlorides 557, the serum protein 9.5. Another transfusion was given. Non-protein nitrogen tests were done about every other day; they ranged between 88 and 91.

About two weeks after admission the wound seemed to be undermined and it was necessary to drain the abdominal wall again at the side of the ileostomy wound. Three days later examination showed crackles over the right lung base, and a medical consultant thought the patient had some pneumonia. The ileostomy, however, seemed to be working well. He seemed to make some progress after that. He had another transfusion a week after the third operation. The non-protein nitrogen came down to 28 and the serum protein to 5.2. The wound cleared up and he was allowed to go out on the piazza at times and smoke. On the eighteenth day he vomited again. He felt much worse, was very weak, and unable to get his breath. He grew gradually weaker and died.

Dr. George W. Holmes: We have two films taken with a portable apparatus. The diaphragm is high on the left, but there is limited respiratory motion on both sides. In the angle between the heart and the diaphragm on the right there is some coarse mottling distributed along the course of the bronchi consistent with a beginning pneumonic process. In an old man it might be a chronic change. The heart is not particularly large. The aorta is not more prominent than it should be at his age. I do not know what caused the high diaphragm. I

do not believe it is due to a subdiaphragmatic abscess because of the motion.

DR. TRACY B. MALLORY: Does that very high serum protein indicate dehydration, Dr. Jones?

DR. CHESTER M. JONES: I think it does.

DR. MALLORY: Would that explain the high non-protein nitrogen, do you suppose?

DR. JONES: Yes, dehydration would explain it. Later it came down.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Carcinoma of the rectum.
Acute intestinal obstruction.

ANATOMIC DIAGNOSES

Resection of the rectum for carcinoma.
Intestinal adhesions.
Intestinal obstruction.
Dehydration and marasmus.
Operative wounds: colostomy, entero-enterostomy, ileostomy.

PATHOLOGIC DISCUSSION

DR. MALLORY: At autopsy perhaps the two most striking features were numerous adhesions throughout the intestinal tract with kinking in a number of areas. There was no single point that seemed completely obstructed, but there were a number of areas which were partially so. I think the functional result was undoubtedly pretty complete obstruction. He had marked dehydration at the time of autopsy. There was no fluid in any of the serous cavities. All the tissues seemed very dry indeed.

One of the reasons for including this case today was that the preoperative symptoms were of relatively long duration. He had had definite pain and bleeding in the rectum for a full year before he came to operation. That of course is only too common a story in cases of cancer of the rectum, one of the reasons why the patient when he finally is operated on often does not have so good a chance as he should have.

Dr. Shedden has been looking up some statistics on the subject of cancer of the rectum.

DR. WILLIAM M. SHEDDEN: I think it is worth while, in an endeavor to get these cases to operation earlier, to recall to mind a few points which have been frequently stressed by Dr. D. F. Jones and others, for it is well known that over 75 per cent of cancers of the rectum and sigmoid are first seen when it is too late to do anything except a colostomy. Often it is not worth while to do even that. One way for us to improve the situation is, of course, to be on the look-out for early symptoms, such as a change in bowel habit, or slight rectal discomfort. Another way is to do a routine rectal examination on everybody, whether he has acute coryza or trouble with the eyes. Two cases I saw recently will illustrate this point. One was a patient who was having a routine physical examination at the Huntington Memorial Hospital. His chief symptom was pain in his leg. Dr. Aub picked up a small carcinoma of the rectum about 6 centimeters from the anus and less than 2 centimeters in diameter, very superficial, proved by biopsy. Dr. Hayden inserted some radium seeds in this case. I saw the patient two weeks ago, about a year after the radium implantation. There had been no recurrence. The patient when first seen showed absolutely no symptoms referable to the rectum. The second case was referred by a local doctor who did a routine physical examination and picked up a tumor of about the same size. I believe therefore that it is distinctly worth while to stress the fact that we should do routine examination of the rectum on all the cases we see in a day.

I should like to call attention to some points in regard to age. All the patients in the cases reported this morning were in the so-called cancer age. I do not know whether it is generally recognized that we have some very youthful cancers of the rectum. I recently looked up 100 cases of cancer of the rectum and found that 5 were under 30. Only one of these 5 was living after 5 years. The course is sometimes very rapid with these young cases and very often the symptoms are quite atypical. In a child there frequently is abdominal pain with no symptoms referable to the rectum at all. In another series I found in the hospital records here one case of a girl 18 years of age operated on by Dr. Jones. The primary symptom was abdominal and left flank pain. There was no history of frequent stools or bleeding. There was abdominal distention. On exploration Dr. Jones found an inoperable neoplasm. The pathologic examination showed atypical endothelial cells arranged in small groups, some showing mucous secretion. I found 3 in this series between 21 and 30, 16 between 31 and 40. Pennington reviewed 7000 cases and found that 40 were under 20, 3 per cent under 30. In another series of 40 cases under the age of 26 all had died within a year; the average duration of life after operation was 6.6 months.

It is necessary to have a pathologic report if we are going to talk of cures by radium. I wish to cite two interesting cases in that connection. One was a man who was seen in this hospital a year and a half ago. Clinically there was a carcinoma of the rectum, an annular, hard, irregular, fixed growth 7 or 8 centimeters from the anus. Exploration was done. Apparently the pelvis was filled with the growth. A colostomy only was done, no resection. I saw him six months later in the Tumor Clinic. The only evidence of any pathology by rectum was three small polyps none of which was more

than half a centimeter at the base or more than 3 millimeters in diameter. The hard irregular growth had disappeared. The pathologic report was chronic inflammation. Clinically however he had carcinoma of the rectum.

Another case at the Huntington Hospital was clinically diagnosed as carcinoma of the rectum. A biopsy showed angiomatous polyposis. He had a colostomy. The growth disappeared. Seven years later he came in here, was operated on for acute appendicitis and developed an acute pneumonia. At the time of the laparotomy for appendicitis there was no sign of any growth.

The youngest authentic case of cancer of the rectum I can find is a girl of 11 reported by C. Stern[1] in 1892. The tumor was annular and 10 centimeters from the anus. The microscopic report was "cylindric" cell carcinoma. That was a rectal case. There are 2 sigmoidal cases in boys 9 years old, one reported by Steinder[2] in 1865, the other by Leijer[3] in 1872. Those both had pathologic reports. A third interesting case is one reported by Ahfeld[4] in 1880 in a monster. Microscopically there was cancer at the "termination of the large intestine". Being a monster, there is no definite statement as to whether they were dealing with the sigmoid, the rectum or the anus.

DR. MALLORY: I do not want to give too many figures, but we have recently been looking up our autopsied cases here and have found one figure of very considerable interest. Out of 51 cases in which we had a chance to do a reasonably complete postmortem examination 26, or over half, had no metastases at all that we could find.

It is also interesting again that among our cases the mortality from simple colostomy is almost the same as the mortality from resection. I think perhaps Dr. Jones will tell us something about that.

DR. DANIEL F. JONES: That is the fact. That is all there is to be said about that. When we do colostomies on very ill patients or in very far advanced cases we do not relieve them of any load; we simply add a load by operation. On the other hand there are a great many cases in which the patient dies of infection that nobody suspects at all. By doing operations on patients who have had colostomy one comes to appreciate that many of them have had extensive peritonitis. I believe that not many men appreciate that there is considerable risk of peritonitis.

DR. MALLORY: Will you say something about the removal of a primary growth even with metastases present?

DR. D. F. JONES: Of course I have very definite ideas on that subject. Each man must decide for himself what he will do. I have done radical operations on many cases with metastases in the liver. One of the most striking cases is that of a man I had here a number of years ago. I started to give up the operation because he had extensive metastases in the liver and because the case was very far advanced throughout. The house officer however reminded me that the patient was very uncomfortable, so I went ahead. I never heard of him until four years later, when he threw himself upon me in the Outpatient Department and thanked me for doing so much for him. He had worked every day up to two weeks before, when he began to feel weak. The liver was down to the anterior-superior spine, yet he had lived four years and a half and worked every day. I have operated in many cases with metastases in the liver and have had the patients live a year very comfortably. I think if anybody lives a year in comfort with cancer of the rectum he is in luck. I think the surgeon is justified in doing a radical operation on a patient with carcinoma of the rectum far advanced and with metastases in the liver if he thinks he can do it successfully, because colostomy with removal of the growth is entirely different from colostomy without removal of the growth. If we do a colostomy and do not remove the growth, very frequently there is tenesmus and discomfort and discharge of mucus and blood which disturbs the patient very much. When I have removed the growth I can tell the patient the growth is removed and he is comfortable physically and mentally. Anybody who gets comfort, mental and physical, for one year gets his money's worth out of the operation, I think.

DR. C. M. JONES: I wish Dr. Jones would comment on the probability of malignant degeneration of polyps in the rectum. There again we seem to be dealing with a condition that is precancerous.

DR. D. F. JONES: Perhaps Dr. Mallory will not agree with me, but every time I remove an adenomatous polyp I think I have prevented the patient from having carcinoma. I have been told by Dr. Leary that I am wrong, that pathologists—and he mentioned several—agree that no such thing occurs, that polyps rarely become malignant. All I can say is that I can quote all sorts of clinical evidence to show that these polyps do become malignant, and I am positive in my own mind that every time I remove a polyp I have saved the patient from having carcinoma. For instance I saw a girl of twenty-three with carcinoma of the rectum. I did a complete colectomy and found three different cancers. That is pretty good evidence that polyps become malignant. Early in my service here when I began to do these operations I saw a woman with a polyp just above the sphincter. That was removed with the cautery. She never had a local recurrence, but died of

metastasis. The site of the metastasis was in the pelvic glands, and I think the glands in the groin were involved. We have quite a number of cases of carcinoma of the rectum with death later from carcinoma of the colon in some other place. One can go on indefinitely and give clinical evidence that is convincing to me at least that adenomatous polyps become malignant, and I think they should be attended to at the earliest possible moment. I have had two young girls with polyps which were finally localized in the sigmoid. I believe very strongly that I have prevented those two girls from having carcinoma of the sigmoid. I feel very strongly about it.

Again we talk about bleeding from the rectum. Polyps as well as hemorrhoids cause bleeding from the rectum, and if a polyp is found and removed one can feel that he has saved a patient from carcinoma.

DR. MALLORY: I agree with Dr. Jones. Here is a specimen which I think proves his point. About two inches above the rectum is a typical carcinoma with indurated margins. Immediately above it are two polyps in the benign stage. I have no doubt that the cancer developed from a third polyp and that if a local resection had been done in time, cancer would not have developed.

DR. D. F. JONES: There have been a great many specimens like that in this hospital. I do not know whether they have been preserved, but there have been quantities of them.

DR. MALLORY: Another point worth emphasizing, too, is that when surgeons do biopsies through the proctoscope and ask the pathologist whether the growth is benign or malignant, again and again, as in the first case, the pathologist's answer on the first specimen is that it is benign. Later under ether a more thorough examination is made and it becomes obvious that it is cancer. I personally therefore entirely distrust my diagnoses of polyp of the rectum until I have a chance to examine the entire specimen. I think the surgeon often can make a more reliable diagnosis himself.

DR. E. PARKER HAYDEN: I might mention very briefly three cases I have operated upon during the past year. That is one of the specimens on the table before us, in which there is a definite carcinoma and also a polyp above it which has definitely passed the boundary line and is classified as a malignant adenoma. A second case also showed on pathologic examination a polyp which had just become malignant, entirely separate from the primary carcinoma. The third case was a four year old child who was seen two months ago with rectal bleeding. I could see no hemorrhoids, and did not expect to find any, but by palpating with my finger I could feel a polyp three inches up. I sent the child in to the hospital, gave him ether, and passed a proctoscope. This polyp hung down from the hollow of the sacrum and was about the size of a raspberry. It was suspended by a small pedicle and was very easy to remove. It seemed to me that this child might perhaps have become the earliest case of rectal carcinoma if I had allowed the polyp to remain.

DR. D. F. JONES: I should like to say that with all respect to pathology, we are asking too much of the pathologist when we present a piece of a growth to him and ask him to say what it is. A very good illustration of that is a case which went to one of our senior surgeons a few years ago. He took a specimen which was reported a polyp. The patient saw one of our younger medical men who told her she had cancer. That incensed the surgeon, and he sent the patient to me. Much to his chagrin I told him she had cancer. I had three other specimens removed from this patient; all were reported as polyps. I can do it over and over again. The only way I know to make sure of the diagnosis is to remove the polyp with the cautery and then watch the area every week until the area heals or leaves a small unhealed spot. If a section is taken from this unhealed spot it will frequently be found to be carcinoma.

DR. SHEDDEN: X-ray of the rectum with a barium enema is of course notoriously unreliable. Time and again we hear the story that a doctor thought no cancer of the rectum was present because the barium enema showed the condition to be non-malignant.

DR. HAYDEN: May I add a word on the Huntington Hospital case of very early cancer Dr. Shedden mentioned. The patient complained of pain in one of his knees, apparently some arthritis. Dr. Aub in the process of routine physical examination did a rectal examination and felt a small tumor just over the prostate, a sessile tumor very slightly over a centimeter in size. We did a biopsy. It showed adenocarcinoma. Several years ago Dr. Shedden and I looked up all the cases of cancer of the rectum which had entered the Huntington Memorial Hospital since it was established, and found that out of the entire group there were no radium cures. Based on that research and on what Dr. Jones has repeatedly emphasized, it would seem illogical to treat this particular man with radium. As a matter of fact, however, he was over eighty years old. I felt that if ever a man could be cured with radium he was the one. The Memorial Hospital in New York has reported a number of cures. It seemed to me that I should look at this particular old man as an individual problem. He was given careful treatment with radium.

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THE COMMONHEALTH

THE first issue of volume 19 of *The Commonhealth*, that interesting and valuable quarterly publication of the Massachusetts Department of Public Health, is devoted to a symposium on dental hygiene, stressing again the scope and usefulness of the Department. Massachusetts, according to the introduction by Dr. Bigelow, was the first State to include dental hygiene in its public health program, having been activated by leaders in the dental profession in 1919, who felt that mouth health is essential to general health, and volunteered to organize a state-wide program for the Department.

In the years 1922-1926 health officials throughout the State became interested in this new phase of child health work, and the Department helped to organize dental clinics for needy children of all ages throughout the State, offering advisory service to dental hygienists employed to do work in the schools. From 1926 to 1928 ways and means were considered of developing the nutritional side of the State and local dental programs and a clinic policy of opening dental clinics to prenatal and preschool cases, and of concentrating school dental clinic work on the lower grades was established. In 1930 the White House Conference crystallized much of the material on the prevention of disease that had been accumulating for several years.

Examples of current thought during this period are quoted as follows:

Good development of the teeth and resistance to dental disease may be a matter of general nutrition.

"Modern research has produced substantial evidence that dental caries depends upon a general metabolic disturbance based on faulty nutrition." (White House Conference.)

The first step in preventive dentistry must be taken by the medical profession.

In public health work the program of the school dentist and school dental hygienist must be supplemented by the work of the public health nurse who has contact with mothers, infants and preschool children.

The contents of the publication under discussion have been contributed by a number of authorities on a widespread variety of subjects ranging from prenatal dental care to institutional dentistry, including discussions on food at low cost for the teeth, the prevention of malocclusion, Vincent's infection, cancer of the mouth, the Junior League dental clinic of Springfield and the Red Cross traveling dental clinic of Hampshire County.

The Massachusetts Medical Society

COMMERCIAL EXHIBITS

IN connection with the One hundred and fifty-first annual meeting of the Massachusetts Medical Society it is interesting to note that, despite the depression, there has been no lack of applicants for space among the commercial exhibitors.

Not only has the entire Ball Room Assembly of the Hotel Statler been engaged, but it has been necessary to arrange for additional booths in the corridor leading to the Exhibition Hall.

The fact that the application blanks were sent out earlier than in previous years may be a factor in this unusual response, but from the comments of exhibitors in previous years it seems probable that the chief reason for the increased demand is that the commercial companies find these exhibits to be an excellent form of advertising.

The list of all products to be exhibited, together with any literature and claims for their therapeutic efficiency, has been submitted to the Committee of Arrangements, and drugs not accepted by the Council on Pharmacy and Chemistry of the American Medical Association have been excluded.

The Committee, therefore, while not guaranteeing the efficacy of the products, believes that the exhibitions will meet with general approval and, it is hoped, will be of interest to the members of the society.

TALKING MOTION PICTURES

The time for the showing of the motion pictures on Wednesday afternoon, June 8, was incorrectly stated in the *Journal* of May 12. The correct schedule appears below:

2:30-3:00—Mechanism of the Heart Beat and Electrocardiography. Excitation and Contraction, and their Effect on the Electrocardiogram as Shown by Animated Cross Sections of the Diagrammatic Heart. Various Abnormalities and Irregularities are Clearly Depicted. (From the Lahey Clinic. Developed by Lewis M. Hurxthal.)

3:05-3:45—Repair of Urethrocele, Cystocele and Lacerations of the Cervix. (Developed by the Petrolagar Laboratories. No. 19 in their series.)

3:50-4:25—Repair of Second and Third Degree Lacerations of the Perineum and Rectocele. (Developed by the Petrolagar Laboratories No. 20 in their series.) The two Petrolagar films were developed by Dr. H. O. Jones, Associate Professor of Gynecology at Northwestern University Medical School and head of the Gynecological Service at St. Luke's Hospital, Chicago.

4:30-5:00—Acute Appendicitis. (Developed by the Eastman Teaching Films, Inc.)

THIS WEEK'S ISSUE

Contains articles by the following named authors:

Reid, William D. A.B., M.D. Harvard University Medical School 1909. Assistant Professor of Cardiology, Boston University School of Medicine. Physician, Massachusetts Memorial Hospitals. Member, Evans Memorial. Cardiac consultant to Newton Hospital and Waltham Hospital. Address: 510 Commonwealth Avenue, Boston. Associated with him is

Levene, George. M.D. Boston University School of Medicine 1925. First Assistant Roentgenologist, Massachusetts Memorial Hospitals. Associate Member, Evans Memorial. Instructor in Roentgenology, Boston University School of Medicine. Address: 351 Winter Street, Norwood, Mass. Their subject is Roentgenologic Consideration of Mitral Heart Disease. Page 1027.

Cheever, David. A.B., M.D. Harvard University Medical School 1901. F.A.C.S. Surgeon, Peter Bent Brigham Hospital. Associate Professor of Surgery, Harvard Medical School. Chairman, Committee on Ethics and Discipline, Massachusetts Medical Society. His subject is Doctor, Medical Society, Layman and State. Page 1032. Address: 193 Marlborough Street, Boston.

Homans, John. M.D. Harvard University Medical School 1903. F.A.C.S. Assistant Professor of Surgery, Harvard Medical School. Surgeon to the Peter Bent Brigham Hospital. His subject is Epidermophytosis (Athlete's Foot) A Cause of Serious Streptococcal Infections. Page 1038. Address: 721 Huntington Avenue, Boston.

Crawford, J. W., M.D. Hahnemann Medical College and Hospital of Philadelphia 1900. Radiologist and Roentgenologist, North Adams Hospital. Member of Staff of North Adams Hospital. Address: 191 E. Main Street, North Adams, Mass. Associated with him is

Kellert, Ellis. M.D. Albany Medical College 1909. Pathologist, North Adams Hospital, Putnam Memorial, Plunkett Memorial and Ellis Hospital. Director, City and County Laboratory of Schenectady. Address: Ellis Hospital, Schenectady, New York. Their subject is Large Cyst of the Orbit. Case Report. Page 1041.

Rogers, William A. Ph.B., M.D. Cornell University Medical School 1919. F.A.C.S. Assistant Visiting Orthopaedic Surgeon, Massachusetts General Hospital. Consulting Orthopaedist, Massachusetts Eye and Ear Infirmary, Palmer Memorial, Vincent and Winchester Hospitals. Assistant in Orthopaedic Surgery, Harvard Medical School. His subject is Report of Progress in Orthopaedic Surgery. Page 1043. Address: 264 Beacon Street, Boston.

MISCELLANY

A RADIO MESSAGE PREPARED AND SPONSORED BY THE COMMITTEE ON PUBLIC EDUCATION OF THE MASSACHUSETTS MEDICAL SOCIETY FOR THE DEPARTMENT OF PUBLIC HEALTH

The Common Cold*

The common cold is a disease of civilization. The Esquimos never had colds until explorers brought the infection to them. At the present time they dread a cold as we dread a plague. We have become so accustomed to colds that we usually make light of them. Of late years, however, we are changing our ideas because experience has shown that the common cold is quite often the forerunner of other illnesses—for instance, of croup or laryngitis in infants and children; abscess of the ear, also, generally in children; and of pneumonia in the aged.

*Broadcast February 18, 1932, Station WBZA—4:50 P.M.

The common cold is not only the most prevalent of all diseases but it is the most infectious. It is air borne and is spread by coughing and sneezing. The organism which causes it has not been found. Within a year one of our best-known medical schools finished an investigation of common colds at a cost of $750,000. They found that the poison of the cold goes through the finest filter that the chemists have been able to devise. They did not succeed in finding the organism.

The entrance to the nose is always filled with organisms breathed in from the air. Most of these are sifted out by the hairs which grow there for this purpose. From time to time organisms get by this barrier—and if they are virulent they cause trouble. The lining of the nose and throat, and for that matter, the lining of the windpipe and its main branches, is a sort of modified skin. Special glands embedded in it keep it moist and lubricated. The mucous glands which do most of the lubricating give this lining its special name of mucous membrane. Without this moistening and lubricating apparatus, the mucous membrane of the nose, throat and windpipe would dry up from the constant passage of air over it. The mucous membrane in the regions just mentioned can be compared to a self-cleaning carpet. The surface cells have projections much like hairs which constantly wave in one direction, backward in the nose to carry secretion into the throat and upward in the windpipe also to carry secretion into the throat. Here it is readily expelled or swallowed. If swallowed it is harmless.

The mucous membrane lines all the air spaces which border the nose and communicate with it. These are called the accessory sinuses. The word sinus simply means a hole. The largest of these sinuses or holes is in the cheek bone, the greater part of which is a sinus or hole. Most people are familiar with this as its floor is made by a thin plate sometimes perforated by teeth and it is often infected from them. It is commonly known as the antrum. The bone of the forehead—the frontal bone—has two sinuses in it, one over each eye. These—the frontal sinuses—connect with the upper part of the nose. They vary greatly in size. Usually their upper limit is about an inch above the eyebrow. It is not uncommon, however, for the frontal sinuses to extend upward as far as the hairline. The purpose of the sinuses is to lighten the head, or rather the bones of the head. The sinuses are filled with air which flows freely back and forth into the nose. We are normally unconscious of them. When infected, as they generally are to some extent in every cold, because the lining of the nose is continuous with the lining of the sinuses, they may fill with secretion or pus, and if this cannot drain readily into the nose, pain results. This is the reason for the morning brow headache which often occurs in connection with a cold. Taken together the sinuses hold a third more than the nasal cavity. As they are generally infected in a cold, the large amount of secretion which goes with a cold in great part comes from the sinuses. The combined capacity of the nose and the accessory sinuses—supposing both are filled at the same time, is about 2½ ounces, or to use an unlovely comparison, over ½ the amount held by the ordinary drinking glass.

There is one type of so-called cold which is not a cold at all. It is a relative of hay fever. It is distinguished by the fact that it is not contagious and lasts the year round. It has the symptoms common to a cold and hay fever, namely, sneezing, nasal blocking, and a watery nasal discharge. This so-called cold may, like hay fever, be due to pollen but is more often due to animal dandruff, feathers, dust, or to some particular food. Strawberries, chocolate or fish produce in some people this form of cold. A good example of this type of cold is found among bakers. In such cases flour dust is responsible. The cure, of course, is a change of occupation when it can be brought about.

The two most common ways of getting a cold are, first, exposure to drafts or getting wet; secondly, the transfer of infection from a person with a cold. The majority of colds are due to infection. Many people can contract a cold either way and soon learn the particular form of exposure which gives them their colds and, when they can control circumstances, avoid such exposure. Some people are almost sure to take cold after exposure to a draft on the back of the neck. Others are equally sure of having a cold on getting their feet wet. Still others, after an evening in the hot, germ-laden air of a crowded hall or theatre, wake up the next day with a cold.

What does a cold do in the nose and throat? It infects and inflames the mucous membrane. This swells and oversecretes. The poisons generated by the inflammation give the familiar symptoms of headache and backache, a feeling of prostration or general illness, and a blocked nose. At first there is a profuse watery discharge accompanied by sneezing. Finally the discharge becomes thicker. Microscopically the thick discharge is found to be made up of mucous and pus cells.

When the infection has spent itself, and in those cases where it has been confined to the nose and upper throat, and has not extended to the ventilating tube of the ear or down to the larynx or windpipe — the sneezing and watery discharge are over in a few days. The general feeling of illness clears up, and the lining membrane of the nose gradually returns to normal. The mucous discharge getting thinner all the time may last for a week or two or drag on for a month.

Repeated colds leave a certain amount of permanent thickening of the mucous membrane, and increase of nasal discharge over the normal amount, or a thick morning discharge which drops into the throat and has to be expectorated. Repeated colds leave an increased susceptibility to pick up infection when a person is next exposed.

Every common disease has a multitude of rem-

edies recommended for it, especially household remedies. This generally means that there is no one cure, also that the medical profession has more to learn about the disease. It is good economy on the Chinese principle of prevention rather than cure to have a physician supervise a cold in the extremes of life. I believe it good economy to do this with a patient of any age. It is money well spent. In these cases which it must be admitted are often trivial, the old family physician is sadly missed. It is not my purpose to give the medical treatment of a cold. Only a physician who sees the individual case can do this. I consider it, however, within the province of this broadcast to say a word or two about household remedies which have been in vogue for years and which have proved of value.

The best single rule in connection with a cold is for the patient to go to bed for a day or two. This is accomplished easily with an infant and the aged are generally willing to take this precaution. Those, however, who are in the robust middle life think that taking such a precaution is acting a little soft. Nevertheless, no single therapeutic measure gives better results. Next in line of treatment comes a hot bath and a hot drink. For myself, I prefer alcohol in it. Combined with these measures, the patient should take a purgative. Aspirin has long been a household remedy for the general muscular pain and headache.

NASAL WASHES

When the nose is overflowing with secretion it is a natural instinct to wish to wash it out, especially as it is so accessible. All nasal washes have as their basis a solution of salt water in the proportion of a spoonful of common salt to a pint of sterile water. When used, the wash should be at body temperature and should not irritate or sting. Some people can use a nasal wash with impunity and with relief. Others wash the infection into their ears and get into trouble. Some physicians condemn nasal washes entirely; others advise them. If a wash is used, the important thing to observe is not to blow the nose until from three to five minutes have elapsed. Let the nose drip with the head forward. Then blow one side of the nose gently. Never squeeze both sides of the nose tightly together and blow them apart with a blast like the blast of Gabriel's trumpet. Blowing the nose should be made one of the gentle arts. If, after using a nasal wash, there is a sense of fulness in one or both ears, stop the use of the wash. An oil spray has not the danger of a nasal wash. An oil spray, of course, won't wash the nose. It simply relieves congestion and opens the nose for the time being. However, this is often grateful.

People who have repeated colds should make sure by a visit to a physician that their nasal breathing is free. The most common cause of obstructed nasal breathing is a deviation of the septum or the middle partition of the nose. Bacteria lodged in the crypts of the tonsils or in stumps of tonsils are another cause. Finally a low grade chronic infection in the antrum is a very important cause of repeated colds.

VACCINES

When the organism which is the cause of the common infectious cold is found and a vaccine prepared from it in the accepted way, the use of vaccines will be logical and probably highly successful. Today the vaccines which are so extensively used are made from three or four of the organisms commonly found in the nose. Now and then success follows their use. There is nothing, however, sure about them. Beware of the doctor who gives vaccines for everything and the commercial doctor who demands cash in advance.

TO SUM UP

The common cold is due to an undiscovered organism, probably a most minute one;—it is the most infectious of all diseases, as well as the most common;—it is spread by coughing and sneezing;—it should be dreaded and precautions taken against it because of the complications which may follow it. These are most common at the two extremes of age, that is, in infancy and in old age.

Speaking of precautions, Dr. Holmes years ago gave good advice about rubbers. Williams, the cartoonist, a year or two ago had a drawing in *Life* bearing on the same subject. If your colds are due to infection avoid as far as possible any person with a sneezing cold. People who would not cough into your face have no compunction about sneezing into it. A handkerchief is more important to smother a sneeze than to blow the nose with. Soon a person with a sneezing cold will voluntarily absent himself from business or from the theatre during the first few days of this infection. Children with sneezing colds should not be sent to school. If they are, they should be sent home. A sneezing cold should not be carried into a household of children and may be taken by a hostess as a legitimate excuse, without further explanation, for refusing to make a fourth hand at bridge.

Finally, avoid infection. If you have a cold, try not to infect others. Go to bed when a cold starts. If you have repeated colds find out from a physician whether you have a normal nose and throat. Smother a sneeze. Shun people who don't. I almost said, "Smother people who don't."

PORTRAIT OF DR. FREDERIC A. WASHBURN PRESENTED TO THE MASSACHUSETTS GENERAL HOSPITAL

An oil portrait of Dr. Frederic A. Washburn, Director of the Massachusetts General Hospital, Boston, has recently been painted and presented by his friends to the Hospital. It is the work of the noted artist, Mr. Edmund C. Tarbell, and is an excellent likeness.

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT WITH 1931 AND SEVEN YEAR AVERAGE

MONTH ENDING APRIL 30, 1932

Diseases	1932 Week ending April 9	1932 Week ending April 16	1932 Week ending April 23	1932 Week ending April 30	Average cases reported for week corresponding to April 30 for past seven years	1931 Week ending April 11	1931 Week ending April 18	1931 Week ending April 25	1931 Week ending May 2
Actinomycosis	—	—	1	—	—	—	—	—	—
Cerebrospinal Men.	2	1	—	—	1	—	2	2	1
Chicken Pox	117	87	78	106	64	90	85	96	88
Conjunctivitis Inf.	—	—	9	3	1	2	6	16	1
Diphtheria	6	8	8	5	17	8	7	11	7
Encephalitis Epid.	1	—	—	—	—	—	—	—	—
German Measles	4	5	5	7	34	7	9	16	6
Influenza	19	17	8	5	21	5	5	7	3
Measles	112	156	160	158	360	795	671	754	466
Mumps	92	67	80	66	44	46	81	60	81
Paratyphoid Fever	—	—	1	5	—	—	—	—	—
Pneumonia (Broncho)	49	27	26	38	36	46	32	50	20
Pneumonia (Lobar)	59	39	30	36	47	50	66	44	39
Poliomyelitis	1	—	—	—	—	—	—	—	—
Scarlet Fever	85	93	119	130	72	55	41	58	59
Septic Sore Throat	2	—	2	1	3	5	1	3	8
Trichinosis	—	—	—	—	—	—	—	1	1
Tuberculosis (Pul.)	23	22	40	38	34	24	24	28	47
Tuberculosis (O. F.)	1	5	2	1	5	3	3	3	2
Typhoid Fever	1	3	—	—	1	1	—	2	1
Typhus Fever	1	—	—	—	—	—	—	—	—
Undulant Fever*	1	—	—	—	—	—	—	1	2
Whooping Cough	152	129	126	96	55	51	61	72	35
Gonorrhea	21	16	50	46	22	24	18	43	23
Syphilis	33	67	61	93	28	21	38	62	37

*Made reportable August 14, 1928.

Remarks: No cases of Asiatic cholera, glanders, plague, or yellow fever during the past seven years.

BIRTHS IN MASSACHUSETTS DURING 1931

There were reported 70,385 births in Massachusetts in 1931, which figures represent the lowest number of births in a single year since 1899, as announced May 10 by Secretary of State Frederic W. Cook. The birth rate, 16.5 and the infant mortality rate 54.0 are the lowest ever recorded in the State. There were 21,642 more births than deaths.

INFECTIONS A FACTOR IN MENTAL DISEASES

Dr. Henry A. Cotton, Director of Research at the New Jersey State Hospital, claims that half of the patients owe their illnesses to definite changes in the tissues of their brains brought about by chronic infections of teeth, tonsils, sinuses or the digestive tract. By eliminating the chronic infections in these patients, double the number of recoveries at the Hospital have been brought about during the last thirteen years. This is shown by the recovery of 2,000 instead of 1,000 patients during that period. Incidentally the State saved $1,000 a day for the maintenance of these patients, leaving out the large amount which may be eliminated from the cost of construction of a new building to care for the otherwise increasing number of patients.

Dr. Cotton began work along this line in 1905, in Munich, where he found that there were definite changes in the brain incident to functional disorders, which he says affect one-half of the patients in mental disease hospitals. Later he found that chronic infections produce poisoning that destroys the brain tissue.

A DEBATE ON HEALTH INSURANCE

Dr. Edward H. Lewinski-Corwin submitted proposals to provide adequate medical care by health insurance at a recent meeting of the Women's City Club of New York City. Dr. Lewinski-Corwin is the executive secretary of the Committee on Public Health Relations of the New York Academy of Medicine and has pointed to the increase in the number of patients who receive free medical treatment at the various clinics of New York City. He claims that under this system physicians have come to feel that "too much charity is being given in medical care": further, that a well-designed health insurance scheme would obviate much of the burden which is being carried by physicians. He also stated that, with the increase of the average span of life among the older groups, there will gradually be an increase in the amount of medical care for individuals who will be unable to meet the costs.

On the other hand Dr. Haven Emerson feels that any proposition for health insurance along the line already adopted in many of the foreign countries is hardly applicable to conditions in the United States. He does feel, however, that insurance already adopted in many of the colleges and industrial centres might have an application to existing conditions.

FOUR PROMINENT BOSTON DOCTORS HONORED

At a testimonial dinner of the faculty of Boston University School of Medicine and the staff of the Massachusetts Memorial Hospitals Dr. Alonzo G. Howard, professor of orthopedic surgery; Dr. Wesley T. Lee, professor of dermatology; Dr. J. Emmons Briggs, professor of surgery, and Dr. Clarence H. Dobson, assistant in medicine, were honored by more than one hundred of their colleagues. The testimonial dinner was given at the University Club on the evening of May 10.

DR. HAVILAND NAMED TO WORCESTER BOARD

Dr. Walter C. Haviland was appointed May 10 by Mayor John C. Mahoney to succeed Dr. Edward H. Trowbridge as a member of the Worcester Board of Health. This nomination will be held up for two weeks for consideration by the Board of Aldermen.

DR. AND MRS. R. C. CABOT GUESTS OF SECRETARY RAY LYMAN WILBUR

On May 10 Dr. and Mrs. R. C. Cabot were the guests of Secretary of State, Ray Lyman Wilbur, in company with President Hoover, Dr. James R. Angell and John D. Rockefeller, Jr.

IOWA BEGINS A CAMPAIGN AGAINST CANCER

It has been announced by the State Health Commissioner of Iowa that his Department has begun a campaign for the control of cancer very much like that which is in progress in Massachusetts. Statistics made public by the Commissioner show that 8,361 Iowans are suffering from the disease and that it caused 2,787 deaths in 1931.

He brings out in this report that sufferers have resorted to many and various methods of treatment by quacks or unscientific people. He concurs in the general opinion that early recognition and prompt treatment are the basis of the reform which must be more general in order to bring about satisfactory results.

ACTIVITY IN PROSECUTING PHYSICIANS

Thirty-two of forty-one Brooklyn, N. Y., physicians against whom informations charging misuse of medicinal whisky prescription permits were filed recently have pleaded guilty. Twelve were fined $150 each and twenty were fined $100 each by the presiding judge. The total amount imposed in fines was $3,800.

INFANTILE PARALYSIS IMMUNITY

Dr. Simon Flexner of the Rockefeller Institute for Medical Research told the members of the National Academy of Sciences at a meeting held at Washington, April 25, that present experiments with lower monkeys indicate that when immune serum is injected under the skin and a single injection of virus is made into the skin itself, active immunity or protection results. Although this method is not yet applicable to children, it is one step in the process of developing immunization procedures and in a way has some relation to the theory of the behavior of toxoid in treating diphtheria.

SURVEY ON CHILD HYGIENE

A National Child Health Campaign has been launched with the appointment of Dr. Estella Ford Warner, a national authority on the subject, as surgeon, it was announced by the Treasury Department April 9.

While conducting this survey Dr. Warner will spend a month or more in each state and will make recommendations to state, civic and private organizations and transmit from one state to another the more noteworthy practices and policies. This survey will include all aspects of child hygiene problems. The Public Health Service will publish a comprehensive review when Dr. Warner completes her tour and this publication will be the basis for standardized and coördinated child hygiene endeavor throughout the country.

LAWS FOR THE CONTROL OF DRUG SALES

Dr. Robert P. Fischelis, Secretary and Chief Chemist, Board of Pharmacy, State of New Jersey, feels that the regulations for the sale of drugs and medicines are inadequate by reason of the fact that many persons are dispensing such remedies who are not registered or working under the immediate supervision of registered pharmacists.

The perplexity of the situation can be traced to a number of causes. Among these are the follow-

ing: Faulty definitions or total absence of definitions for the loose terms used in many pharmacy laws; lack of uniformity in the provisions regulating the sale of drugs and medicines in the laws of various states, especially neighboring states.

The courts are also finding difficulty because of inadequate definitions in the law. The difficulty seems to be rather general that legislative procedures are dealt with by men who are not familiar with technical problems and, consequently, although governed by the best intentions, fail to apply safeguards with reference to certain technical procedures especially relating to the sale of drugs and medicines.

Dr. Fischelis closed his statement by affirming that no state has, at present, an ideal law governing these questions.

IMPROVEMENT IN THE DISTRIBUTION OF MILK

The Milk Commission of New York City Department of Health has recommended that after January 1, 1933, the sale of unbottled milk shall be prohibited except to hospitals and other institutions and for cooking and other purposes in restaurants and bakeries. Such distribution would be made under regulations prescribed by the Department of Health, the Commission recommending that the milk be sold only in large cans filled and sealed at the pasteurizing plant. In connection with these suggestions the Commission proposes to study ways to lower the cost of bottled milk.

Rhode Island is also paying especial attention to the importance of providing milk free from infestations by tubercle bacilli and abnormal incidence of putrefactive germs. Under the new law, the cost of inspection and registration of all dairy farms will be met by the State and there will be no charge to the owner.

Another bill (H866) passed provides that at the discretion of the Commissioner of Agriculture persons buying milk on the weight and test basis must weigh the milk in the original container so as to protect the seller against unnecessary loss and shrinkage.

In Rhode Island, an area test law has also been adopted. This provides for the control of bovine tuberculosis on the so-called area plan, which means that, when 85% of the cattle are tested, or 75% of the cattle owners shall voluntarily place their herds under state and federal supervision for the eradication of bovine tuberculosis, such area may be quarantined and all of the cattle within the area tested. The Legislature provided $75,000 to take care of the increased demand for testing.

TUBERCULOSIS IN EARLY ADULT LIFE

Studies made by Miss Jessamine S. Whitney, statistician of the National Tuberculosis Association, tend to show that in all probability much of the high death rate in early adult life of women is due to the debilitating effects of early motherhood, because a large proportion of the young mothers do not take proper measures to protect their health. This is in contradiction to the commonly accepted idea that insufficient clothing, improper dieting and social activities have had something to do with the incidence of tuberculosis in the early adult group among women.

$125,000,000 SPENT ANNUALLY ON HEALING CULTS IN THE UNITED STATES

Washington, D. C., May 2—Approximately $125,000,000 annually, equivalent to 12 per cent of the amount spent on the 142,000 doctors of medicine, is expended in the United States on 36,150 other practitioners who hold themselves out to treat the sick—osteopaths, chiropractors, naturopaths and allied healers, and Christian Science and New Thought practitioners—according to Louis S. Reed, Ph.D., in a report presented to the Committee on the Costs of Medical Care May 1.

Present legislation designed to protect the public from unqualified practitioners is not accomplishing its purpose, according to the report, for, although it maintains high standards for doctors of medicine, it sanctions the existence on a lower plane of qualifications of thousands of poorly trained practitioners. The use of any therapeutic measures by untrained or poorly trained individuals, unable to diagnose disease and unaware of their limitations, is unsound, dangerous and wasteful, no matter how sound those measures may be, Mr. Reed said.

The report stated that, while religious healing is able to accomplish beneficial results in some conditions, it may be harmful when practiced by those unable to diagnose disease, especially when it is held that disease is an illusion.

Mr. Reed's report, "The Healing Cults," published by the University of Chicago Press, is the sixteenth study completed by the Committee on the Costs of Medical Care which, on November 29, will issue its final report with recommendations based on its exhaustive five-year study of the problem of "the delivery of adequate, scientific medical service to all the people, rich and poor, at a cost which can be reasonably met by them in their respective stations in life".

As a result of his exhaustive study, Mr. Reed estimated that the people of the United States annually spend $42,000,000 for the services of the nation's 7,650 osteopaths; $63,000,000 on 16,000 chiropractors; $10,000,000 on 2,500 naturopaths and allied groups; and another $10,000,000 on the 10,000 Christian Science and New Thought healers.

A study of 7,800 representative families revealed that only 52 families considered healers in these cults as their family practitioners. Only 1.3 per cent of the families having medical care during the year used them exclusively, although 10 per cent resorted to healing cult practitioners at one time or another.

CULTIST SCHOOLS FOUND WEAK

The report traces the development and history of the various cults and contains descriptions of the schools, ideas and legal status of each group. It points out the similarity in the origin of many of the cults, in that originally their treatments were "cure-alls" based on all-inclusive theories of the cause of disease. Modification of such theories and the elevation of professional and educational standards gradually lead the cult to improve in training and diminish in number and eventually to be assimilated into the general body of regular medical practitioners, according to the report.

Mr. Reed condemned the quality of teaching in the chiropractic and naturopathic schools. He found that entrance requirements are lax, equipment is poor, and none makes adequate hospital clinical facilities available to its students, while faculties are largely composed of persons ignorant of the established facts of medicine. At the completion of the regular course in one school, the report reveals, the student receives four diplomas and becomes a Doctor of Chiropractic, a Doctor of Naturopathy, a Doctor of Physiotherapy and a Master of Physical Culture.

WHY DO CULTS EXIST?

In explaining the prevalence of healing cults Mr. Reed stated that, "The idea of healing the sick, and being a 'doctor' with all that the title entails, is very attractive to many people, but this field of economic endeavor is closed to many by reason of the very high qualifications which the law requires of medical practitioners. Healing cults, therefore, provide a short cut for those who lack time, money or mental capacity to attain the qualifications demanded of the medical profession."

Mr. Reed gave some of the reasons why the public patronized healing cult practitioners:

1. Because of inattention by some medical practitioners to minor illnesses and to ailments of the mind.

2. Because doctors cannot cure all diseases and those who have failed to obtain help from regular doctors feel that little is lost by trying the "irregulars".

3. Because many people are still basically superstitious about disease and health. They know little about the body and its functioning. They regard medicine neither as science nor art but as magic. To these the healing cult practitioner, with his simple explanation of disease, his confidence and his promise of cure, appears as a greater magician than the physician whose very knowledge makes him hesitate to promise a cure.

4. Because many patients are unaware of the limitations of the healing cult practitioners whom they consult, since they do not understand the meaning of D.O., D.C., N.D., and other titles of the various practitioners indiscriminately called "doctor". The reputation of healing cult practitioners is sustained by the fact that in acute diseases 80 to 90 per cent of all patients get well under any treatment or none. When a patient gets well his recovery is attributed to the virtues of the treatment.

MAKES RECOMMENDATIONS REGARDING THE CULTS

Mr. Reed pointed out the following ways in which the situation with regard to the healing cults can be improved:

The lay community's stock of knowledge regarding the human body and its functioning must be enlarged and more widely disseminated. As a result, for each succeeding generation, the limits within which credulity exists and unscientific practitioners can operate will be narrowed.

The passage by more states of basic science laws may be expected to cut down the inflow of poorly trained practitioners. These laws, already in existence in some states, require that all applicants for licenses to practice any branch of the healing art must first pass an examination in the basic sciences. The state should see that healing practitioners, whatsoever their beliefs, are properly trained and that they possess an adequate knowledge of the human body and its functioning and the diseases which afflict it.

SOME PROBLEMS WITH RESPECT TO BLINDNESS

New York City, April 24—The numerous ways in which doctors, teachers, social workers, and others are striving to conserve the vision of American children are described in the Annual Report of the National Society for the Prevention of Blindness, made public today by Lewis H. Carris, Managing Director. "The sooner defective vision can be discovered and eye diseases recognized, the greater the chance of overcoming the handicap of poor vision and of effecting a cure," says the report, entitled "How Eyes Are Being Saved."

One of the specific instances of progress given is the further reduction of blindness from ophthalmia neonatorum, commonly known as "babies' sore eyes". In 1931, only 7.5 per cent of all new admissions to schools for the blind had lost their sight from this cause, as compared with the 28 per cent disclosed by the records of 1907. The report points out that blindness from this cause is preventable, in the light of present-day scientific knowledge; and the Society promises to continue its strenuous efforts toward the goal of complete eradication of ophthalmia neonatorum.

Although the eyesight of children is emphasized in this year's report, the Society mentions the fact that industrial eye accidents are "probably the most serious cause of blindness". Most industrial eye accidents are preventable, the report says, but "it is estimated that in American industry more than 2,000 workmen lose one or both eyes, 300,000 minor eye injuries are received, and approximately $50,000,000 is wasted in time lost, compensation and medical bills, each year. The Society is continuing its active coöperation with the National Safety Council and

the American Society of Safety Engineers, and preparations have been made for a more extended safety campaign in 1932."

"Fire-crackers, air-guns, BB rifles, sharp-pointed toys, scissors, and forks and knives used as playthings, annually take a great toll of children's eyes," according to the Society. "Some of this loss of sight may be prevented by legal provisions or regulations, but the greater responsibility rests with parents, who must be educated to the dangers inherent in certain toys and other objects commonly used by children in play. Studies made by the Society indicate that there is great need for more extended activities to reduce the loss of eyesight from these preventable causes.

"An unusually important project, undertaken during the past year in coöperation with the Department of Education of Columbia University, is a study to determine what effect reading actually has on the eyes; that is, whether there is such a thing as a saturation point beyond which the eye suffers, no matter how ideal the factors of lighting or good sight are. The results of this study promise to be of very great importance to adults as well as to school children, in the home and in the office as well as in the schoolroom.

"The Society has aggressively continued the promotion of sight-saving classes for children with such seriously defective vision that they cannot take with profit the work of the regular grades. During 1931, 22 additional classes were organized, bringing the total number in the United States to 398, located in 114 cities in 23 states. It is estimated that 4,600 sight-saving classes are still needed for all school children requiring special eye care. This educational campaign must continue until every child with poor vision is given the advantage of studying in a sight-saving class especially adapted to his needs.

"The Society assisted, as usual, in the training of teachers for sight-saving classes. Sixty-eight teachers were enrolled in courses given at Columbia University, State Teachers College at Buffalo, Tulane University, and the University of Chicago. At each of these institutions staff representatives gave instruction.

"Also in the interest of the eyesight of school children, the Society has participated in the revision of the Code for Lighting School Buildings. A representative of the Society is an active member of the committee especially selected by the Illuminating Engineering Society to determine and set up lighting standards in schools. A preliminary revision of the Code is already in print and the final report is expected shortly.

"Activities in connection with the White House Conference on Child Health and Protection have been continued during the past year. The report of the section on special education is already in print, and in this volume the Society shares the responsibility of the section on the Partially Sighted. Local conferences are being held as a result of the Conference in Washington, and the National Society is called upon to advise in those aspects of the study concerned with the eyesight of school children.

"During 1931, the Society gave 103 demonstrations of vision testing in 42 cities in nine states, before 6,789 school and public health nurses, teachers, doctors and social workers, many of whom are now carrying on this work in their respective communities. In one state alone more than 8,000 preschool children had their vision tested in accordance with the methods advocated by the Society, and the results proved conclusively the importance of early eye examinations."

AMERICAN MEDICAL ASSOCIATION

An Effort for the Endorsement of Birth Control

A proposal was submitted at the meeting of the American Medical Association May 9 to make birth control a standard, legal medical practice. The proposal was presented at the opening session of the House of Delegates, the official legislative body of American medicine. The suggested regulation was presented by Dr. J. D. Brook of Grandville, Michigan, who proposed the appointment of a committee to spend a year in the study of all phases of the problem and to recommend at the next annual meeting of the Association whether the practice ought to be incorporated in recognized medicine.

A late report is to the effect that in dealing with the proposition, the House of Delegates went into executive session and voted unanimously against conducting investigations with reference to birth control.

Reports Respecting the Effect of Serum Treatment for Infantile Paralysis

According to the results of the use of serum in treating cases of infantile paralysis reported from New York City through many months' study of last summer's cases by the New York Academy of Medicine and the New York City Health authorities, there is apparently slight reason to feel that it is effective. The report was made by Dr. William H. Park of New York University. Children attacked by infantile paralysis were separated into two groups. One group of 519 received serum. Another of 408 had none. Of the serum children, 68% recovered without paralysis. Of the non-serum children 74½% recovered similarly. A smaller but more intensive test was reported by the Harvard Infantile Paralysis Commission and showed more favorable results with the use of the serum. The latter test was conducted by Drs. W. L. Aycock and S. D. Kramer of Boston.

A REPORT ON HEALTH INSURANCE

With 20 to 30 per cent of the sick in the United States not at present receiving adequate medical care, some form of compulsory health insurance is almost certain to be adopted to care for these people, according to A. M. Simons and Dr. Nathan Sinai, who have just concluded a two-year investigation of the situa-

tion in this country and abroad. Their report was published recently in book form by the University of Chicago Press under the title, "The Way of Health Insurance."

The social, economic and political conditions that led to the enactment of health insurance laws in all leading European countries are now present in the United States, they say, and the pressure for this relief measure is increasing. Health insurance bills are now before the legislatures of several states or are being drafted.

"Health insurance," they state, "is neither a panacea for all preventive and public-health problems, nor the bureaucratic state medicine so abhorrent to the other extremists. Notwithstanding the many faults and deficiencies of the various systems, no country that has ever tried compulsory health insurance would be willing to go back to preinsurance days, and notwithstanding their conflicts with its policies, there is practically no opposition in the medical professions of any insurance country to the principles of insurance. Nor has any dental association in any insurance country ever officially condemned the system of insurance.

"In France, after the insurance law had passed in the Chamber of Deputies, the physicians and dentists united, tardily, in an attack on it, held up its enforcement for two years, and virtually rewrote it. Under the French health laws, the relation between practitioner and patient is virtually the same as in private practice. The patient has free choice of practitioner, the practitioner fixes his own fee, and the insured presents the practitioner's bill to the insurance organization and is reimbursed with a percentage of it—usually 80 per cent.

"In Great Britain and Germany the situation is very different. All medical and dental service is free to the patient, but he must choose his practitioner from an approved list. In Germany the families of the insured are covered. In Great Britain they are not. The British system differs from the German in the further respect that specialist services are not included, and medical service is, so far as practicable, divorced from the social management that determines whether cash benefits shall be paid. Our investigation leads us to believe that separation of the medical service from the administration of cash benefits results in a more efficient and honest operation of the system. Cash benefits in time of sickness, like those for old age, widowhood, unemployment, military services, etc., should be based upon economic conditions in which health is but one factor.

"As to the effect of compulsory health insurance laws upon the practice of physicians and dentists, we found, in all countries, that while there is wide variation in professional incomes under insurance, they will average at least as high, and probably somewhat higher, than they were in private working-class practice before insurance. There is no loss by bad debts, and there is a much larger sum of money expended for the work of physicians and dentists. There is less idle professional time; the average insurance physician and dentist do considerable more work and receive more pay than they did before the installation of insurance."

Mr. Simons is a member of the research staff of the committee on the study of dental practice of the American Dental Association, and Dr. Sinai is Associate Professor of Public Health at the University of Michigan. Their investigation was made under the auspices of the American Dental Association and the American College of Dentists.

"Their report," says Dr. Herbert E. Phillips, chairman of the Committee on the Study of Dental Practice, "will serve as a warning to the physicians and dentists of this country that if they do not take a hand in formulating the policies of any insurance system that may be installed in the United States, the professions may find themselves in conflict with its practices when it is too late."

THE APPOINTMENT OF DR. MARTIN J. ENGLISH

His Honor, Mayor Curley, has chosen Dr. Martin J. English for the position of Trustee of the Boston City Hospital.

Dr. English is a native of Worcester where he was born in 1882. He has been physician-in-chief of the pediatric departments at the Boston City Hospital; St. Elizabeth's, Brighton; St. Margaret's, Dorchester, and the Whidden Memorial Hospital in Everett. He graduated from Holy Cross in 1903 and from the Harvard Medical School in 1907. He has served as interne in the City Hospital and the South Department from 1907 to 1910 and until 1914 was Resident Physician in the South Department. Dr. English was identified with Base Hospital 7 at Camp Devens in charge of the treatment of contagious diseases and accompanied the unit to France. Later he was physician to the inter-allied commission in Poland and since 1922 has practiced in Boston.

SICKNESS AMONG INDUSTRIAL EMPLOYEES DURING THE FINAL QUARTER OF 1931 AND THROUGHOUT THE YEAR

Continuing the favorable trend of preceding quarters, the final three months of 1931 recorded a small decrease in the frequency of sickness causing disability for more than one week as compared with the rate in the fourth quarter of 1930, and a substantial decrease (17 per cent) from the frequency in the last quarter of 1929. These findings were obtained upon analysis of all cases of disabling illness of 8 days' duration or longer, occurring among the male members of 27 industrial sick-benefit associations coöperating with the United States Public Health Service in current studies of the health of the industrial population. A favorable health status is thus indicated for a sample group of the industrial population of the country.

The record included about 144,000 men for the last quarter of 1931, about 154,000 for the corresponding period of 1930, and approximately 160,000 for the same period of 1929. For 1930 and 1931 the sickness rates covered identical companies, and for 1929, applied to 23 of the 27 companies included in 1930 and 1931.

For the year 1931 as a whole the sickness rate was somewhat higher than in 1930 on account of epidemic influenza in the first quarter of 1931. Exclusive of influenza, the 1931 sickness rate was the lowest of any year during the last decade. The influenza epidemic, although widespread, was not severe enough to increase appreciably the frequency of pneumonia and the year as a whole recorded one of the most favorable pneumonia rates experienced by the industrial population of the country since 1917.

A comparatively low rate of new cases of tuberculosis of the respiratory system was shown for 1931. A remarkable decrease was indicated for diseases of the upper respiratory tract, especially for bronchitis (acute and chronic), and for diseases of the pharynx and tonsils (chiefly tonsillitis), the rates for these diseases being below the frequency shown for any of the preceding ten years.

The rate for digestive diseases as a whole was below the average rate for the preceding ten years, but certain numerically important diseases of the digestive system failed to pursue a declining trend line. The most notable decrease as compared either with 1930 or with the ten-year average was recorded for diseases of the stomach (except cancer). A favorable rate, also, was shown for diarrhea and enteritis. Appendicitis, however, was reported at exactly the average incidence exhibited during the preceding ten years, and cases of hernia were more numerous than in the preceding year or in the ten-year period. For other diseases of the digestive system as a group the 1931 rate was also relatively high.

The incidence rate of non-respiratory, non-digestive diseases was below the annual average frequency from 1921 to 1930. Within this very broad class of diseases, however, certain sub-groups showed rates in 1931 which were in excess of the ten-year average. Among these were certain diseases of the circulatory system, especially diseases of the heart, diseases of the genito-urinary system and adnexa (except nephritis), and diseases of the nervous system.

On the favorable side, attention may be called to a substantial decrease in the frequency of rheumatism (acute and chronic), diseases of the skin, and the epidemic and endemic diseases, exclusive of influenza. In the last-named group are typhoid, smallpox, measles, scarlet fever, whooping cough, diphtheria, mumps, erysipelas, and other important epidemic and endemic diseases which, as a group, decreased in frequency in 1931 in the population under consideration.—*U. S. Public Health Service.*

RECENT DEATH

LANE—Dr. Orville Wilbur Lane, well-known physician in South Berkshire, died April 23 in that town. He was born on October 20, 1855, in Orange, Vermont. Following his graduation in Philadelphia in 1887 he went to Great Barrington to begin the practice of his profession. He was married to Mary Heald Dix, who died a few years ago. The survivors are two daughters, a son, three brothers and four sisters.

OBITUARY

RESOLUTIONS ADOPTED BY THE SOMERVILLE MEDICAL SOCIETY ON THE DEATH OF DR. THOMAS M. DURELL MEDICAL EXAMINER

Whereas, after the lapse of many years of faithful and valuable service, as a physician with a heart that beat warmly for the unfortunate and suffering, Dr. Thomas M. Durell, who did his duty resolutely and cheerfully, has passed away.

Be it resolved:—That in the death of Dr. Durell, an active and useful career has been brought to a close. His fellow physicians will always remember him as a painstaking, able and efficient practitioner of medicine.

Be it further resolved:—That the Somerville Medical Society hereby expresses its realization of the great loss sustained by sending these resolutions to the bereaved family with our deepest sympathy, a copy to the *Somerville Journal*, the *New England Journal of Medicine*, and placing it on the records of the Society.

Frederick G. Smith, M.D.,
George W. W. Whiting, M.D.,
Charles E. Mongan, M.D.
Crawford K. Sweeley, M.D., *Secretary.*

NOTICE

RADIO HEALTH MESSAGES

May-June, 1932

Sponsored by the Public Education Committee of the Massachusetts Medical Society and the Massachusetts Department of Public Health.

Courtesy WBZ. Tuesdays, 4:20 P.M.

May

24 Medical Care
31 Growth and Development

June

7 Prenatal and Maternity Service
14 New Findings in Oral Hygiene
21 Community Public Health
28 Communicable Diseases

State House Broadcast

Sponsored by the Massachusetts Department of Public Health.

Courtesy WEEI. Fridays, 12:30 P.M.

Health matters of public interest discussed by the Division Directors of the Department.

RADIO HEALTH FORUM

Queries from the public are answered under the sponsorship of the Department of Public Health.

Courtesy WEEI. Fridays, 4:50 P.M.

Questions on Health and Prevention of Disease may be sent to Radio Health Forum, State Department of Public Health, State House, Boston.

REPORTS AND NOTICES OF MEETINGS

THE ANNUAL MEETING OF THE WORCESTER DISTRICT MEDICAL SOCIETY*

This meeting was held at the Cohasse Country Club, Southbridge, Mass., Wednesday, May 11, 1932.

SOCIAL PROGRAM

(a) Golf 2-6 P.M. The Southbridge District Medical Society invited all to play golf on the Cohasse Country Club course as their guests. There was no greens fee.

(b) Hospital Visitation. The New Harrington Memorial Hospital was open to members of the Medical Society during the afternoon.

(c) Industrial Exhibit. The officials of the American Optical Company invited all to visit the Southbridge Plant, where many scientific instruments were shown in the process of manufacture, assembly and use. The plant was open for visitation all day Wednesday until 5 P.M., and guides were furnished to conduct Society members through the departments.

(d) 7:00 P.M. The Annual Dinner was served.

BUSINESS AND SCIENTIFIC PROGRAM

8:00 P.M. Business Meeting. Committee Reports. Election of Officers.

8:30 P.M. Annual Oration. "Congenital Pyloric Stenosis." Dr. Walter C. Seelye, Worcester.

A list of officers elected for the ensuing year is as follows:

President: Dr. Edwin R. Leib, Worcester.

Vice-President: Dr. Walter C. Seelye, Worcester.

Orator: Dr. Ernest B. Emerson, Rutland.

Treasurer: Dr. Edward P. Disbrow, Worcester.

Secretary: Dr. Erwin C. Miller, Worcester.

Councillors on Nominations: Dr. David Harrower, Worcester; Dr. Royal P. Watkins, Worcester—Alternate.

Committee on Funds: Dr. Michael F. Fallon, Worcester; Dr. Royal P. Watkins, Worcester; Dr. Leslie R. Bragg, Webster.

Commissioner of Trials: Dr. Walter P. Bowers, Clinton.

Councillors: Dr. James C. Austin, Spencer, term began 1930; Dr. Walter P. Bowers, Clinton, term began 1902 (Councillor for life by virtue of being a past President of the State Medical Society); Dr. Leslie R. Bragg, Webster, term began 1922; Dr. Frank H. Clapp, North Grafton, term began 1930; Dr. Philip H. Cook, Worcester, term began 1929; Dr. William J. Delahanty, Worcester, term began 1913; Dr. George A. Dix, Worcester, term began 1921; Dr. George E. Emery, Worcester, term began 1920; Dr. Michael F. Fallon, Worcester, term began 1916; Dr. Homer Gage, Worcester, term began 1906; Dr. James J. Goodwin, Clinton, term began 1921; Dr. David Harrower, Worcester, term began 1905; Dr. Ernest L. Hunt, Worcester, term began 1918; Dr. Arthur W. Marsh, Worcester, term began 1922; Dr. Joseph W. O'Connor, Worcester, term began 1931; Dr. Walter C. Seelye, Worcester, term began 1930; Dr. Albert M. Shattuck, Worcester, term began 1931; Dr. Edward H. Trowbridge, Worcester, term began 1924; Dr. Frank H. Washburn, Holden, term began 1916; Dr. Royal P. Watkins, Worcester, term began 1927; Dr. Samuel B. Woodward, Worcester, term began 1902 (Councillor for life by virtue of being a past President of the State Medical Society).

Censors: Dr. George A. Dix, Worcester; Dr. Benjamin H. Alton, Worcester; Dr. Ralph S. Perkins, Worcester; Dr. Michael B. Fox, Worcester; Dr. Winifred M. Grant, Worcester.

Nominating Committee: Dr. H. V. Williams, Whitinsville; Dr. C. R. Abbott, Clinton; Dr. C. H. Sparrow, Worcester; Dr. John Fallon, Worcester; Dr. Alvin R. Moses, Charlton.

Library Committee: Dr. William F. Lynch, Worcester; Dr. William F. Holzer, Worcester; Dr. Oliver H. Stansfield, Worcester.

Librarian: Dr. Albert C. Getchell, Worcester.

Auditing Committee: Dr. Joseph I. Askins, Milford; Dr. Marshall Colcord, Southbridge; Dr. Haskell Talamo, Worcester.

This was one of the largest annual meetings in the history of this Society.

The oration by Dr. Seelye was of especial merit.

*Reports of elections are as furnished by the district secretaries. If there are found to be errors, they will be corrected in the official report of the Secretary of the Massachusetts Medical Society.

AMERICAN CLIMATOLOGICAL AND CLINICAL ASSOCIATION

Under the leadership of Dr. Louis Hamman of Baltimore, the American Climatological and Clinical Association held a very successful meeting on May 5, 6 and 7 at the Sea View Golf Club of Absecon, near Atlantic City, New Jersey, an ideal place for a small group of about one hundred to meet. A full fifty per cent of the membership was present which is a large attendance, since representatives of the Association are found in localities from Portland, Maine, to Portland, Oregon, Los Angeles and Galveston, Texas.

Drs. George R. Minot, Maurice Fremont-Smith, W. H. Robey, Henry Jackson, Jr., and Howard B. Sprague presented papers while Dr. Joseph H. Pratt led a round-table discussion on Psychogenic Cardiac Manifestations.

The officers elected for the ensuing year are: President, George R. Minot of Boston; Vice-Presidents, James E. Paullin of Atlanta and Thomas C. Kelly of Philadelphia; Secretary and Treasurer,

A. K. Stone of Framingham, Mass.; Recorder, Francis B. Trudeau of Saranac Lake.

The Boston men elected to membership are Drs. Howard B. Sprague and Howard F. Root.

NORFOLK DISTRICT MEDICAL SOCIETY*

Dr. George B. Magrath, Medical Examiner of the Northern Division of Suffolk County, gave one of his interesting lectures before the 82d annual meeting of the Norfolk District Medical Society May 10 at the Hotel Kenmore. At this meeting the following officers were elected: Dr. Simon F. Curran of Dorchester, president; Dr. Alexander S. Begg of West Roxbury, vice-president; Dr. Frank S. Cruickshank of Roslindale, secretary; Dr. George W. Kaan of Sharon, treasurer; Dr. H. R. F. Watts of Dorchester, commissioner of trials; Dr. David G. Eldridge of Dorchester, nominating councillor, and Dr. C. S. Francis of Brookline, alternate nominating councillor. Dr. W. A. Lane was added to the list of councillors of the society.

HAMPDEN DISTRICT MEDICAL SOCIETY*

The annual meeting of the Hampden District Medical Society was held at the Hotel Nonotuck, Holyoke, Mass., April 26.

The following officers were elected:

President: Fred H. Allen, Holyoke.

Vice President: J. Z. Naurison, Springfield.

Secretary-Treasurer: H. L. Smith, Springfield.

Commissioner of Trials: J. M. Birnie, Springfield.

Supervisor of Censors: M. W. Harrington, Indian Orchard.

Censors: A. J. Douglas, G. L. Gabler, E. P. Bagg, Jr., J. A. Seaman.

Nominating Councillor: G. L. Schadt; Alternate: E. A. Knowlton.

Councillors: S. A. Mahoney, Sr., H. W. Van Allen, G. L. Steele, J. J. Carroll, G. D. Henderson, A. G. Rice, M. B. Hodgskins, M. W. Pearson, E. S. Smith, R. A. Rochford, L. D. Chapin, M. W. Harrington.

The summer meeting will be held at the Monson State Hospital at the kind invitation of Dr. M. B. Hodgskins.

A paper of the afternoon, presented by Dr. Edwin H. Place, Boston, on "The x-ray and management of contagious disease," was well received.

Discussion by the Fellows followed.

Dinner was served at 6 P.M.

J. A. Whitney, *Reporter.*

Note: Although Dr. John M. Birnie's name does not appear he is ex-officio a member of the Council by virtue of having been President of the State Society, as provided in the By-laws.

THE FRANKLIN DISTRICT MEDICAL SOCIETY*

The annual meeting of the Franklin District Medical Society was held at the Weldon Hotel, Greenfield, on May 10. The following officers were elected for the ensuing year:

President: Dr. A. E. Johnson, Greenfield.

Vice President: Dr. Howard B. Marble, Shelburne Falls.

Secretary and Treasurer: Dr. Charles Moline, Sunderland.

Censors:

Supervisor: Dr. R. A. McGillicuddy, Turners Falls; Dr. H. M. Kemp, Greenfield; Dr. J. C. O'Brien, Greenfield; Dr. J. W. Cram, Colerain.

Councillors:

Nominating: Dr. H. G. Stetson, Greenfield; Dr. R. A. McGillicuddy, Turners Falls

After routine business, Dr. Paul Wakefield was introduced as guest speaker and described the workings of the Chadwick Clinic and some of the newer thoughts on diagnosis, treatment and prognosis in tuberculosis.

Charles Moline, *Secretary.*

*Reports of elections are as furnished by the district secretaries. If there are found to be errors, they will be corrected in the official report of the Secretary of the Massachusetts Medical Society.

THE WACHUSETT MEDICAL IMPROVEMENT SOCIETY

At a meeting of the Wachusett Medical Improvement Society at the Holden Clinic, Holden, Mass., on May 4, Dr. Edward M. Hodgkins, Assistant Professor of Surgery at Tufts College Medical School, gave a talk with lantern slide demonstration on "The Changing Conception in the Operative Treatment of Inguinal Hernia."

HARVARD MEDICAL SCHOOL ALUMNI ASSOCIATION

The annual meeting of the Harvard Medical School Alumni Association will be held in the Salle Modern in the Hotel Statler, June 9, in connection with the usual luncheon at one o'clock.

Since this meeting is scheduled at the same time and place as that of the Massachusetts Medical Society, it may be of convenience to the members of the Association who wish to attend certain sessions of the Medical Society.

BETH ISRAEL HOSPITAL HOUSE OFFICERS' ALUMNI ASSOCIATION

The last meeting of the Beth Israel House Officers' Alumni Association on April 13, 1932, took the form of an informal dinner at the conclusion of which Dr. William B. Castle presented the subject of Anemia in a deft, comprehensive and very delightful manner.

The following were elected as officers for the ensuing year:

President: Dr. John B. Sears.

Vice-President: Dr. Arnold Starr.

Treasurer: Dr. William S. Altman.

Ruth Weissman, M.D., *Secretary.*

BETH ISRAEL HOSPITAL PEDIATRIC CLUB

The next regular meeting of the Pediatric Club will be held on Thursday, May 26, 1932, in the Beth Israel Hospital Auditorium at 2:15 P.M.

Program: Infantile Eczema, by Lewis Webb Hill, M.D. Discussion by J. H. Swartz, M.D.

RUTH WEISSMAN, M.D., *Secretary.*

SOCIETY MEETINGS CONGRESSES AND CONFERENCES

May 20—The New England Roentgen Ray Society. See notice on page 1025, issue of May 12.

May 26—Beth Israel Hospital Pediatric Club. See page 1069.

June 6, 7, 8, and 9—National Tuberculosis Association. See page 598, issue of March 17.

June 8, 9, 10—Massachusetts Medical Society, Hotel Statler, Boston.

June 9—Harvard Medical School Alumni Association. See page 1069.

June 21-24—Catholic Hospital Association. See page 369, issue of February 18.

July 10 - August 12—The Second Intensive European Summer Course in Surgery, Gynecology and Obstetrics. See page 714, issue of March 31.

Autumn—International Postgraduate Courses in Berlin. See page 1169, issue of December 10.

September 19-22 — International Congress of Biliary Lithiasis. See notice on page 427, issue of February 25.

October 24-27 — American Public Health Association. See notice on page 1321, issue of December 31.

October 24-28—Inter-state Postgraduate Medical Association of North America. See page 39, issue of January 7.

BOOK REVIEWS

History of Medicine in the Province of Quebec. By MAUDE E. ABBOTT. 95 pages, McGill University, Montreal, Canada. Price $3.00.

There has recently been published by Dr. Maude E. Abbott of Montreal in "The Storied Province of Quebec" (The Dominion Publishing Company, Ltd.), an interesting, instructive, and valuable chapter on the history of medicine in the Province of Quebec.

As a description of the conditions in the practice and teaching of medicine in Canada from the earliest times until recent days this account of Dr. Abbott's is outstanding and in many ways parallels the recent work of Francis R. Packard on "The History of Medicine in the United States." Not only has material of much importance and fundamental historical value been assembled by Dr. Abbott but the account is entertainingly and well written.

The work demands a summary in some detail and I can best present this summary by direct quotations from the publication. The various section headings will be given in sequence below, and occasional paragraphs of particular interest entered under these various headings. Of course the names of many physicians of the Province of Quebec mentioned by Dr. Abbott are not entered here.

Era of Primitive Medicine; Indian Medicine in Eastern Canada.

"In the Indian conception, disease might be produced by natural causes, in which case it should yield immediately to 'natural remedies' (potions, plasters, sweat baths, etc.). Or it was of supernatural origin, caused either (a) by some hidden desire of the patient's soul which must be divined, with the help of dreams and riddles, and be satisfied before he could recover; or (b) it was believed to be due to a spell or charm placed upon his body, or a portion of this, by a sorcerer acting from without, which must be exorcised and removed, either by emesis or by blowing upon or incising and sucking the painful part, and pretending to extract a small stone, twig, bit of hair or other object that had usually been concealed in the Juggler's mouth. In all such treatments the help of the Medicine-man or woman was required, and when the patient was important, the services of several such personages."

Scurvy among the First French Settlers (1535-1608).

"To this land of densely crowded primeval forest, great rivers and inclement winters, peopled only by a savage race dominated by a strange necromancy, yet wise with their native knowledge of the woods, came, in the year 1535, Jacques Cartier with his three good ships.' Manned these must have been with at least one trusty surgeon, for all French sailing-vessels were so provided, and an apothecary named Francoys Guitault had accompanied Cartier on his first voyage to the Gulf the previous year. No mention is made, however, either by Cartier himself or in any other contemporary account of this voyage of any such functionary, nor does it appear that there was anyone among his little company competent to deal with the deadly scurvy that broke out among his half-famished crews during the cold and privation of the winter of 1535-36, which they passed on the back of the St. Charles just below Quebec. Out of the 110 men in his party twenty-five died and all but three were disabled before any way could be found to stop the progress of the disease, the cause of which, lying as it did in the diet deficiencies, was not in the least understood. Had it not been for the discovery by Cartier himself that the Indians possessed a sovereign remedy in the administration of copious draughts of the infusion of the hemlock spruce, the little colony would probably have succumbed and been entirely wiped out. His description of the disease as it appeared among his starving followers, of the autopsy that was done by a half-skilled member of the party upon one Phillippe Rougemont, a sailor dead from it, in a vain attempt to ascertain and remove its cause, and of the wonderful cure of all the survivors by the administration of the 'Anneda' as the Indians called their 'tree of life', deserves a place among the classics of the History of Medicine."

French Medicine in the Seventeenth Century

"Had it not been for the tenacity of purpose and agricultural intelligence of Louis Hébert, surgeon-apothecary of Paris, and the sagacious forethought and public-spirited citizenship of Robert Giffard, a physician of Normandy, in making good their habitation and succession here, the little colony at Quebec could hardly have withstood the storms and difficulties that beset it, and the advance of civilization in this locality might have been for many decades deferred.

"Turning to the latter half of the 17th century,

we are struck by the relatively large number of barber-surgeons, apothecaries, qualified physicians, midwives, and charlatans to boot, who poured across the Atlantic to these shores at this time, when the French at last embarked, under the prudent administration of Colbert and the paternal government of Louis XIV, on a real colonization policy, that, notwithstanding its limitations and inevitable autocracy, bore immediate and abundant fruit. New France became a Royal colony in 1663, and the tide of immigration set in two years later and lasted in full flood for some seven years (1665-1672), with the result that the population, which in 1648 had numbered only 241 persons, had increased in 1698 to over 15,000 souls. Medical practitioners appeared in the country in corresponding ratio. Ahern mentions no less than 84 persons practicing medicine here in the last half of the 17th century, of whom 36 were at Quebec, 22 in Montreal or the vicinity, 8 at Three Rivers, 2 at Sorel, 1 (Dusablon) at Gaspé Basin, and the others at Batiscan, Chateau Richer, Ile d'Orleans, etc.; and to these M. Massicotte adds 12 others (not included by Dr. Ahern) located in the District of Montreal, making a total of 96, which is a relatively high proportion. It is to be realized however that only a few of these were of actual professional importance, and a number were undoubtedly self-educated and self-styled, for qualifications to practice were not defined to any clear legal restrictions, and charlatanry abounded. Towering above the rank and file of all is the figure of Michel Sarrazin, Doctor of Medicine of the University of Rheims, who arrived in Canada in 1685, and whose election in 1699, when a physician in active practice in New France, to the newly formed Academie des Sciences of Paris, coinciding as it did with the election of Sir Isaac Newton to that body in the same year, links this country with that great late-seventeenth century movement for the diffusion of international knowledge above mentioned."

Pioneer Physicians to the time of Michel Sarrazin (1608-1685). Rise of the Early French Hospitals, (1639-1697).

"All five of these historic hospitals were founded in the heroic and adventurous years of the seventeenth century. The Hôtel Dieu of Quebec and that of Montreal had a romantic origin in its third and fourth decades; while the Hôtel Dieu of Three Rivers and the Hôpital Général of Quebec and that of Montreal arose together in its last ten years to meet the growing needs of the population and the furious epidemics that broke out with new contingents brought by the King's ship from France."

Michel Sarrazin and his Time, (1685-1735); Pioneer physicians to the year 1760.

Pioneer physicians from 1735 to 1760. (Successors of Michel Sarrazin to the French Régime).

"Of great renown in this and also in other fields was the brilliant Jean Francois Gaultier, a physician of Normandy, who was created medecin du roi for Quebec in 1741, while still in France, and who shares with Sarrazin a place of honour among the foremost of his medical contemporaries on this continent. He came out in 1742, and appears to have added to his medical activities some legal training by following assiduously certain law lectures being given at the time in Quebec, so that he was later made on this ground an Assessor of the Superior Council on whose Board he sat. Like Sarrazin he was a Corresponding member of the Academie Royale des Sciences, selected by M. Du Hamel on April 12, 1745, and like him he sent large contributions to the Jardin du Roi of objects of natural history, collections of various kinds of grain, etc., and his name was likewise given by the Academie to several botanical discoveries, notably the Gaultheria procumbens (winter-green)."

Medical Legislation under the French Régime

French Practitioners during the Early Years of British Rule (1760-1800).

"The first half century after the signing of the Treaty of Paris in 1763 was an intensely dramatic transition period, during which a French colony of some 60,000 persons newly freed from the domination of the most autocratic government in Europe, became merged with an English-speaking minority of some 300 souls to form the elements of a future nation pregnant with the instinct for self-government and imbued with a spirit of loyalty to the British flag, that carried safely through the invasion of 1775 and the war of 1812 to the achievement later of a high degree of political autonomy. By a curious turn of the wheel, the Revolution, which in 1776 cost England her Thirteen Colonies, had as its corollary the migration to the coasts and forests of this country of no less than 35,000 persons, who populated the banks of the St. Lawrence and the lower Ottawa as well as Ontario and the Maritime Provinces with a sturdy British stock of invincible royalty, culled from among the best elements of the seceding United States.

"In the domain of Medicine the complex conditions of the difficult years immediately after the conquest were abundantly reflected. The 'code' regulating medical practice enacted by the French Government in 1750 naturally fell into disuse, and no legislation took its place until the rapid increase of charlatanry (always flourishing in the colony) and the growing number of unlicensed and ignorant self-trained practitioners in the outlying country districts became so glaringly apparent that the Government was induced, in 1788, to pass a Medical Act providing that no one should practise physic, surgery, or midwifery in the Province without a licence from the Board appointed by the Governor in Chief, to be granted on the presentation of suitable degrees or diplomas, or after satisfactory examination. . . .

"What, it may be asked, was this curious disease, popularly known as the Maladie de la Baie or Malbaie Disease, that figures so largely in the medical history of this part of Canada in the latter

part of the eighteenth century, and that fills so many pages of the Dominion Archives? It was first brought to the attention of the Government in the year 1773 as an obscure contagion which had broken out in the remote parishes of Baie St. Paul and Éboulements from contact, tradition said, with some Scotch soldiers landed there, and which had spread like an epidemic through the countryside from St. Paul's Bay up the St. Lawrence as far as the Cedar Rapids and Ile Jésus above Montreal and along the Ottawa to Michilimackinac. Opinions differed as to its nature, but the majority believed that it was really syphilis. . . ."

Contemporary Physicians of British or Foreign Origin.

Inoculation and Vaccination.

"Ever since the coasts of North America had become the home of the white man the dreadful scourge of smallpox had found in the virgin soil of this continent a fertile field wherein it wrought dire havoc, spreading like wildfire among the Indian tribes and decimating the French and the later British settlers wherever it broke out. The preventive measure of producing immunity in the individual by inducing a mild attack of the disease itself (inoculation), or by introducing the serum of the relatively innocuous cowpox (vaccination), found a ready hearing in a country where experience had taught the most untutored inhabitants that persons recovering from a first attack were not susceptible to reinfection, at least for a period of years, and that no other means existed of arresting this virulent contagion once it had appeared. Long before the discovery of vaccination by Jenner, direct inoculation by the transmission of a small amount of infective matter derived from a mild case of true smallpox was used, and this method came into popular use in England in 1727 and appears to have been brought into Canada about the year 1765."

The Licensing Act of 1788.

"At a meeting of the Quebec Legislative Council on March 3, 1787, a Bill was brought in by Mr. Finlay, seconded by Mr. Mabane, 'to prevent persons from practising Medicine, Surgery, or Midwifery without licence', and on April 30 of the following year this Bill was altered to read 'An Ordinance to prevent persons practising Physic and Surgery within the Province of Quebec and Midwifery in the towns of Quebec and Montreal.'"

Pioneer Physicians and Medical Activities in the early Nineteenth Century.

Origin of the Montreal General Hospital. May 1, 1819.

The Montreal Medical Institution and the Medical Faculty of McGill University.

"On October 20, 1822, at a meeting of the medical officers of the Montreal General Hospital held 'to consider the expediency of establishing a medical school in this city', Drs. Stephenson and Holmes were deputed to draw up the considerations that seemed to warrant such an endeavour at this Hospital. This document was accordingly, with an outline of the proposed curriculum, submitted to the same Board the following week (October 27) and approved. Its opening words are historic and may be quoted here, as also the interesting references in it to the Edinburgh School and to the important part which the new Institution was to play a few years later in the stabilization of the infant college of James McGill, in both of which the vision of its Founders is clearly manifested.

"The Medical Officers of the Montreal General Hospital, having seen the great difficulties which the student of medicine in this country has to encounter before he acquires a competent knowledge of his profession; knowing the great inconvenience resulting to many from the necessity at present existing of spending several years in a foreign country to complete a regular medical education, and being convinced of the advantage which would result from the establishment of a medical school in this country, and considering that the Montreal General Hospital affords the student a facility of acquiring a practical knowledge of Physic never before enjoyed in these Provinces, an advantage which will be greatly enhanced by the establishment of lectures on the different branches of the profession, have met to consider of the possibility of founding such an institution in this city. . . ."

The Great Epidemics and the Development of Quarantine Regulations in Canada.

"The early history of the Montreal General Hospital, like that of its predecessors in the seventeenth and eighteenth centuries, the Hotels Dieu and the French General Hospitals of Quebec and Montreal, is the lurid record of a gallant struggle with the awful epidemics of typhus and smallpox, that devastated and at times almost annihilated the inhabitants of Canada under both French and British rule. It was, as we have seen above, the inadequate provision for the pressing emergencies presented by the typhus epidemic among the Irish immigrants in 1817 that, more than any other single factor, called the English General Hospital into being, and on this altar two of its first medical staff as well as its first Matron laid down their lives, Henry P. Loedel dying of typhus 'in the service of the Hospital' in 1825 and Dr. Caldwell in 1833. Just so, in an earlier generation, did the brilliant Jean Francois Gaultier and a score of devoted sisters yield up their lives in the combat of the same dread disease. To these fearful contagions, now only too familiar to the Canadians, was added, in the fourth and sixth decades of the nineteenth century the visitation of Asiatic cholera which took a yet higher death toll from the afflicted population and again taxed the resources of the new public Hospital of Montreal to the limit of endurance."

Establishment of the French Medical Schools, the Medical Faculty of Laval University and that of the Université de Montreal.

Rival Medical Schools in Montreal.

"The early medical schools, namely, the Montreal Medical Institution becoming the Medical Faculty of McGill University, the Incorporated School of Medicine of Quebec becoming the Laval Medical Faculty, and the School of Medicine and Surgery of Montreal, which has come so happily into its own in the University of Montreal and which, although founded in a spirit of rivalry to McGill by English members of the profession had catered from the first to the French students and ultimately became entirely French—were all three educational movements which grew out of the intrinsic needs of the two nationalities in the Province, and all have reached fulfilment today, each functioning in its own sphere."

Medical Journalism and Societies.

"Here again, as in the early development of medical education in Canada, we must give the palm to the Province of Quebec, which undoubtedly blazed the trail in both these fields for Canada as a whole. The first medical journal published in this country was that bearing the title *Journal de Medecine de Quebec*, published quarterly in Quebec city in the years 1826 and 1827, under the able editorship of the young Xavier Tessier. . . .

"Most important of all perhaps is the account given on pages 106-114 of the organization of the Quebec Medical Society at its first meeting on November 30, 1826, at which Morrin was elected president, Perrault, vice-president, and Tessier, secretary.

"Unfortunately this interesting *Journal* stopped two years after its inception for lack of financial support. Eighteen years later appeared the first entirely English medical journal in Canada. This was the *Montreal Medical Gazette*, the first number of which appeared on April 1, 1844, edited by Drs. Badgley and Sutherland, and which ran until May 1, 1845.

"From the publication of the *Montreal Medical Gazette* in 1844, an English medical Journal, under varying titles and different editors but in direct sequence, was issued in Montreal until the year 1911, when the printing of the *Canadian Medical Association Journal* was removed to Toronto."

Medical Licentiation since the act of 1788. College of Physicians and Surgeons of Quebec.

First Use of Anaesthetics in Canada.

Dr. James Barry.

The Care of the Insane.

The Canadian National Committee for Mental Hygiene.

Hospitals of Quebec Today.

"On January 2, 1894, the Royal Victoria Hospital of Montreal received its first patient. This was a red-letter day not only for this province, but for the hospital world at large; for an endowed institution, erected on a commanding and beautiful site, on a scale commensurate with the responsibilities and opportunities for the relief and prevention of disease that the scientific advances of the present time are continually unfolding, was on that day thrown open to the public. Its erection was made possible by the joint gift of $1,000,000 from Lord Strathcona and Lord Mount Stephen, presented in commemoration of Queen Victoria's Jubilee year, and this was followed by further large donations from the same generous sources towards its revenue and endowment, and it was built on land given by the city on the slope of Mount Royal just behind the McGill Medical Buildings, its close proximity to these adding immensely to its value as a clinical teaching unit and as a centre for medical research. Constructed at first to accommodate 250 patients, it has been enlarged by repeated extensions so that it is now an immense hospital of 700 beds, which treated, by its last report, 14,307 indoor patients (of whom 1,925 were children) and gave 78,356 outdoor consultations in 1929."

History of the Montreal Morgue.

Outstanding Names in the Later Nineteenth Century.

"Space does not permit of more than a brief mention of some among that galaxy of men who in the middle and later nineteenth century, laid the foundations of modern medicine in this Province, at a time when the new ideas in Pathology and Preventive Medicine were stirring in the air, and the gospel of clinical teaching by direct observation was being grasped by the Profession. Grouped around the great name of William Osler (who graduated from McGill in 1872 and passed the first ten years [1874-1884] of his active professional life as a member of the Professoriate of that School), the men who were his forerunners, associates and immediate successors may rightfully claim a share in the undying honour that attaches to him as the greatest Master of Medicine this continent has produced."

Phylaxis. By the late G. Billard, M.D. (Translated by H. Gainsborough.) The Macmillan Co. New York, 1931. Price $3.00.

This is a study by the French physiologist Billard of various substances which modify the action of such neurotoxins as snake venom or tetanus toxin on animals.

The word "phylaxis" is coined to describe this protective effect which has nothing in common with the better known neutralizing action of the specific anti-toxins. The substances which, according to Billard, exert this phylactic action are numerous and heterogeneous — the neurotoxins themselves, alkaloids, formalin, chloroform, certain mineral water, etc. The author considers that these all exert their protective action against snake venom or tetanus toxin by making the nerve cell impermeable to the neurotoxin. The experiments are interesting

and, if they can be repeated, will have to be explained. Billard's own explanations are ingenious but largely based on theoretical conceptions. One has the feeling that the author could explain anything, but so can Freud.

The Surgical Clinics of North America. New York Number. Volume 12, Number 2. April, 1932. W. B. Saunders Company, Philadelphia.

This issue opens with the presentation by Lilienthal of a case of a chest wall defect with a bronchial fistula. A previous operation had left an area of practically exposed lung. With the electric scalpel the area was dissected and a plastic closure made.

Whipple discusses the problems of stones in the bile ducts. In preparing a jaundiced patient for operation he uses both calcium and glucose. For exploration of the common duct he relies chiefly on irrigation.

John Erdmann discusses some of the details of preoperative care, operating room technic, and postoperative care.

An operation for the formation of an artificial vagina is described by Frank. He makes a tube flap on the thigh and transplants it between the bladder and the rectum. He also presents a very interesting account of the clinical application of biological endocrine tests, describing the technic of the tests for pregnancy and for the female sex hormone as applied to cases of sterility and amenorrhea. There is a close relationship of the pituitary and ovarian hormones. The therapeutic use of these glandular extracts has been disappointing.

Russel H. Patterson presents a very able discussion of salivary gland and duct calculi.

Sheehan believes that the most satisfactory treatment of keloids is excision with the use of radium between the wound edges before suturing the wound. He reports an excellent result in a case of facial paralysis by the use of pedicle muscle grafts from the temporal and masseter muscles together with the insertion of fascial slings.

Adair reports a study of neurogenic sarcoma well illustrated by cases. Good results have been obtained by a combination of surgery and radiation.

A unique and valuable feature of this issue is a group of three symposiums from the Post-Graduate Medical School and Hospital. The first is on the liver and gall-bladder. Heyd discusses jaundice; Killian the chemical analyses of blood and urine of cases exhibiting jaundice and disturbances of liver function; MacNeal the liver changes in abdominal disease; and Davidson the preoperative and postoperative care of biliary tract and liver cases. A similar group discusses the various aspects of diseases of the thyroid. The final symposium is on diseases of the breast. MacNeal points out the various types of chronic cystic mastitis. H. W. Meyer emphasizes the important considerations in treatment of cancer of the breast and mentions the hope of further progress in the treatment of cancer by control of the hydrogen-ion concentration of the blood. Goodman describes the endocrine influence upon the breast and reports relief from painful breasts by the use of ovarian residue.

The Social and Ethical Significance of Nursing. By ANNIE W. GOODRICH. The Macmillan Company. New York, 1932. Pp. 401. Price $3.00.

This book by the Dean of the Yale University School of Nursing, while interesting and impressed with the dynamic personality of the author, is nevertheless disappointing to one who seeks a well-ordered account of the social and ethical significance of nursing. The book is made up of a collection of addresses and short articles grouped under the headings, "The Nurse and Ethics", "The Nurse and Education", "The Nurse and the Hospital", "The Nurse and the Community", "The Nurse and War", "The Nurse and the World", "The Nurse and the University", and "The Nurse." There is little or no continuity. Much of the material is good, some is somewhat better suited to the occasional address for which it was planned than perpetuation in book form.

The subject matter present is varied, interesting, and often valuable. Much is implied but little is explicitly stated. However, the high expectations created by the title fail to be entirely realized. It is to be hoped that Dean Goodrich's sound judgment and rich experience will be made available in a more helpful form.

Female Sex Hormonology. By WILLIAM P. GRAVES, M.D. 131 pages, illustrated. W. B. Saunders Company, Philadelphia. Cloth, $3.50.

Dr. Graves has given the medical student and the profession a delightful review of the present status of the sex hormones. It is a very clear exposition of the evolution of this fascinating subject.

He has included in his book a very complete glossary, a well-chosen bibliography and an excellent index.

It is a most excellent review of the subject, and it is unfortunate that the publisher felt that it should be priced so high.

Textbook of Gynecology for Nurses. By PHILIP J. REEL, M.D., F.A.C.S. Illustrated with 81 engravings. F. A. Davis Company, Philadelphia. Price $2.50.

This book covers the usual field of gynecological books. At the end of each chapter are a few review questions for the nurse.

The material is what one would expect in any such book. There is nothing added that is especially new, and that has not been given in other books before. It is entirely satisfactory in the way it is presented, but the reviewer questions the need of any more such books, as there are already others that cover this same field.